JAN

**

Access DB# 99911

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: R GITOMER Examiner # : 69630 Date: 7/28/03
Art Unit: 1651 Phone Number 308-0732 Serial Number: 09/913,361
Mail Box and Bldg/Room Location: 11B01 11D11 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

_____

Earliest Priority Filing Date: _____

***For Sequence Searches Only** Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

JAN

Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
CM1 1E07 - 703-308-4498
jan.delaval@uspto.gov

****

STAFF USE ONLY

Searcher: _____
Searcher Phone #: 4498
Searcher Location: _____
Date Searcher Picked Up: 8/13/03
Date Completed: 8/13/03
Searcher Prep & Review Time: _____
Clerical Prep Time: 15
Online Time: 160

Type of Search

NA Sequence (#)_____
AA Sequence (#)_____
Structure (#) _____
Bibliographic _____
Litigation _____
Fulltext _____
Patent Family _____
Other _____

Vendors and cost where applicable

STN _____
Dialog _____
Questel/Orbit _____
Dr.Link _____
Lexis/Nexis_____
Sequence Systems _____
WWW/Internet _____
Other (specify)_____

PTO-1590 (8-01)

Scientific & Technical Information Center
USPTO

STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 99911

TO	From
TO: Ralph J Gitomer	From: Jan Delaval
Location: 11b01 / 11d11	Location: Biotech-Chem Library
Wednesday, August 13, 2003	CM1-1E07
Art Unit: 1651	Phone: 308-4498
Phone: 308-0732	
Serial Number: 09 / 913361	jan.delaval@uspto.gov

Search Notes

STIC SEARCH RESULTS

Biotech-Chem Library

Questions about the scope or the results of the search? Contact *the searcher or contact:*

Mary Hale, Information Branch Supervisor
308-4258, CM1-1E01

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* [ ] *Example: 1610*
- *Relevant prior art* ***found****, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

  Types of relevant prior art found:
  - ☐ Foreign Patent(s)
  - ☐ Non-Patent Literature
    (journal articles, conference proceedings, new product announcements etc.)
- *Relevant prior art* ***not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC/Biotech-Chem Library CM1 – Circ. Desk

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=> fil reg
FILE 'REGISTRY' ENTERED AT 14:02:55 ON 13 AUG 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2003 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   12 AUG 2003  HIGHEST RN 565411-31-6
DICTIONARY FILE UPDATES:  12 AUG 2003  HIGHEST RN 565411-31-6

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available.  See HELP
PROPERTIES for more information.  See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> d ide can tot

L88  ANSWER 1 OF 7  REGISTRY  COPYRIGHT 2003 ACS on STN
RN   97089-70-8  REGISTRY
CN   Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI)  (CA
     INDEX NAME)
OTHER NAMES:
CN   E.C. 1.11.1.12
CN   Phospholipid hydroperoxide glutathione peroxidase
CN   Selenoperoxidase
MF   Unspecified
CI   MAN
LC   STN Files:   AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA,
       CAPLUS, CASREACT, EMBASE, TOXCENTER, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
             247 REFERENCES IN FILE CA (1947 TO DATE)
               4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
             247 REFERENCES IN FILE CAPLUS (1947 TO DATE)

REFERENCE   1:  139:68398

REFERENCE   2:  139:66752

REFERENCE   3:  139:52172

REFERENCE   4:  139:49000

REFERENCE   5:  139:20085

REFERENCE   6:  139:4267

REFERENCE   7:  138:399038

REFERENCE   8:  138:383455

REFERENCE   9:  138:382751

REFERENCE  10:  138:298823
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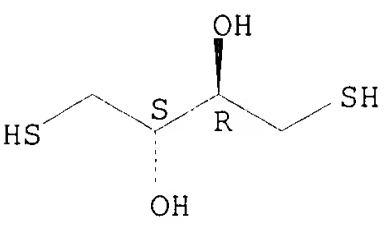
L88 ANSWER 2 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN
RN **6892-68-8** REGISTRY
CN 2,3-Butanediol, 1,4-dimercapto-, (2R,3S)-rel- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 2,3-Butanediol, 1,4-dimercapto-, (R*,S*)-
CN Erythritol, 1,4-dithio- (8CI)
OTHER NAMES:
CN 1,4-Dithioerythritol
CN Dithioerythritol
CN DTE
CN erythro-1,4,-Dimercapto-2,3-butanediol
FS STEREOSEARCH
MF C4 H10 O2 S2
CI COM
LC STN Files: AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DRUGU, EMBASE, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MSDS-OHS, NIOSHTIC, PROMT, RTECS*, SPECINFO, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Relative stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

588 REFERENCES IN FILE CA (1947 TO DATE)
17 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
588 REFERENCES IN FILE CAPLUS (1947 TO DATE)

REFERENCE 1: 139:74140

REFERENCE 2: 139:64564

REFERENCE 3: 139:48332

REFERENCE 4: 139:32933

REFERENCE 5: 139:22078

REFERENCE 6: 138:381681

REFERENCE 7: 138:333880

REFERENCE 8: 138:284049

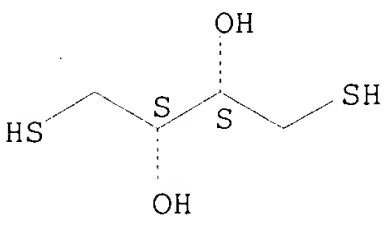
REFERENCE 9: 138:221460

REFERENCE 10: 138:132122

L88 ANSWER 3 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN
RN **3483-12-3** REGISTRY

CN 2,3-Butanediol, 1,4-dimercapto-, (2R,3R)-rel- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 2,3-Butanediol, 1,4-dimercapto-, (R*,R*)-
CN Threitol, 1,4-dithio- (7CI, 8CI)
OTHER NAMES:
CN (.+-.)-1,4-Dimercapto-2,3-butanediol
CN (.+-.)-Dithiothreitol
CN 1,4-Dithio-DL-threitol
CN 1,4-Dithiothreitol
CN Cleland's reagent
CN Dithiothreitol
CN DL-1,4-Dimercapto-2,3-dihydroxybutane
CN DL-1,4-Dithiothreitol
CN DL-Dithiothreitol
CN DTT
CN DTT (threitol derivative)
CN rac-Dithiothreitol
CN Reagents, Cleland's
CN Sputolysin
CN threo-1,4-Dimercapto-2,3-butanediol
CN threo-2,3-Dihydroxy-1,4-butanedithiol
CN WR 34678
FS STEREOSEARCH
DR 27565-41-9, 28823-08-7, 214119-27-4
MF C4 H10 O2 S2
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DRUGU, EMBASE, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Relative stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

4428 REFERENCES IN FILE CA (1947 TO DATE)
69 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
4435 REFERENCES IN FILE CAPLUS (1947 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 139:97486

REFERENCE 2: 139:96519

REFERENCE 3: 139:85201

REFERENCE 4: 139:81143

REFERENCE 5: 139:81133

REFERENCE 6: 139:81126

REFERENCE 7: 139:81071

REFERENCE 8: 139:80455

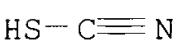
REFERENCE 9: 139:80414

REFERENCE 10: 139:74140

L88 ANSWER 4 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN
RN **593-84-0** REGISTRY
CN Thiocyanic acid, compd. with guanidine (1:1) (7CI, 8CI, 9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Guanidine thiocyanate (6CI)
CN Guanidine, monothiocyanate (8CI, 9CI)
OTHER NAMES:
CN Guanidine isothiocyanate
CN Guanidinium thiocyanate
CN NSC 2119
DR 134932-17-5, 60930-22-5, 109028-07-1, 151201-26-2, 90229-46-2, 5341-59-3, 40817-29-6
MF C H5 N3 . C H N S
CI COM
LC STN Files: AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CHEMCATS, CHEMLIST, CIN, CSCHEM, DETHERM*, EMBASE, HODOC*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS, PROMT, RTECS*, SPECINFO, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

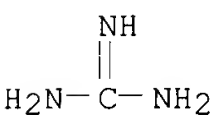
CM 1

CRN 463-56-9
CMF C H N S



CM 2

CRN 113-00-8
CMF C H5 N3



489 REFERENCES IN FILE CA (1947 TO DATE)
3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
491 REFERENCES IN FILE CAPLUS (1947 TO DATE)
14 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 139:97519

REFERENCE 2: 139:90513

REFERENCE 3: 139:86751

REFERENCE 4: 139:84159

REFERENCE 5: 139:49513

REFERENCE 6: 139:32744

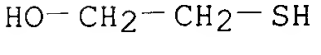
REFERENCE 7: 138:381744

REFERENCE 8: 138:381660

REFERENCE 9: 138:365135

REFERENCE 10: 138:349185

L88 ANSWER 5 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN
RN **60-24-2** REGISTRY
CN Ethanol, 2-mercapto- (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN .beta.-Hydroxyethanethiol
CN .beta.-Hydroxyethylmercaptan
CN .beta.-Mercaptoethanol
CN 1-Hydroxy-2-mercaptoethane
CN 1-Mercapto-2-hydroxyethane
CN 2-Hydroxy-1-ethanethiol
CN 2-Hydroxyethanethiol
CN 2-Hydroxyethyl mercaptan
CN 2-ME
CN 2-Mercapto-1-ethanol
CN 2-Mercaptoethanol
CN 2-Mercaptoethyl alcohol
CN Ethylene glycol, monothio-
CN Hydroxyethyl mercaptan
CN Mercaptoethanol
CN Monothioethylene glycol
CN Monothioglycol
CN NSC 3723
CN Thioethylene glycol
CN Thiomonoglycol
FS 3D CONCORD
DR 99748-78-4
MF C2 H6 O S
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

7413 REFERENCES IN FILE CA (1947 TO DATE)

373 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
7428 REFERENCES IN FILE CAPLUS (1947 TO DATE)
134 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 139:106433

REFERENCE 2: 139:96851

REFERENCE 3: 139:90377

REFERENCE 4: 139:89894

REFERENCE 5: 139:86691

REFERENCE 6: 139:85600

REFERENCE 7: 139:81071

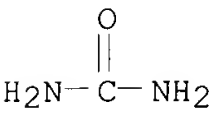
REFERENCE 8: 139:79255

REFERENCE 9: 139:79121

REFERENCE 10: 139:77850

L88 ANSWER 6 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN
RN **57-13-6** REGISTRY
CN Urea (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Aquacare
CN Aquadrate
CN B-I-K
CN Basodexan
CN Benural 70
CN Carbamide
CN Carbamimidic acid
CN Carbonyl diamide
CN Elaqua XX
CN Eucerin 10% Urea Lotion
CN Hyanit
CN Isourea
CN Keratinamin
CN Keratinamin Kowa
CN NSC 34375
CN Nutraplus
CN Onychomal
CN Optigen 1200
CN Pastaron
CN Pastaron 10
CN Pastaron 20
CN Pastaron 20 soft
CN Pseudourea
CN UR
CN Urea perhydrate
CN Ureaphil
CN Ureophil
CN Urepeal
CN Urepeal L
CN Urepearl
CN Urevert
CN Varioform II
FS 3D CONCORD
DR 30535-50-3
MF C H4 N2 O

CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PHAR, PIRA, PROMT, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

65866 REFERENCES IN FILE CA (1947 TO DATE)
3057 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
65926 REFERENCES IN FILE CAPLUS (1947 TO DATE)
9 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 139:110538

REFERENCE 2: 139:110511

REFERENCE 3: 139:108726

REFERENCE 4: 139:107077

REFERENCE 5: 139:107064

REFERENCE 6: 139:106534

REFERENCE 7: 139:106419

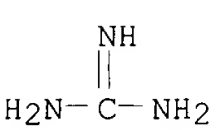
REFERENCE 8: 139:106255

REFERENCE 9: 139:106109

REFERENCE 10: 139:105165

L88 ANSWER 7 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN
RN **50-01-1** REGISTRY
CN Guanidine, monohydrochloride (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Guanidine chloride
CN Guanidine hydrochloride
CN Guanidinium chloride
CN Guanidinium hydrochloride
DR 420-13-3, 14317-32-9, 15827-40-4, 94369-44-5, 139693-44-0, 143504-22-7, 87667-20-7, 106946-18-3
MF C H5 N3 . Cl H
CI COM
LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DETHERM*, DIOGENES, EMBASE, GMELIN*, HODOC*, IFICDB, IFIPAT, IFIUDB, IPA, MRCK*, MSDS-OHS, NIOSHTIC, PIRA,

PROMT, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (113-00-8)



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PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3208 REFERENCES IN FILE CA (1947 TO DATE)
27 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
3216 REFERENCES IN FILE CAPLUS (1947 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 139:108958

REFERENCE 2: 139:102704

REFERENCE 3: 139:95549

REFERENCE 4: 139:81281

REFERENCE 5: 139:81257

REFERENCE 6: 139:81192

REFERENCE 7: 139:80901

REFERENCE 8: 139:80866

REFERENCE 9: 139:77788

REFERENCE 10: 139:69243

=> d his

(FILE 'HCAPLUS' ENTERED AT 12:36:55 ON 13 AUG 2003)
DEL HIS
L1 1 S (EP99-103959 OR WO2000-EP1877)/AP,PRN
E FLOHE L/AU
L2 248 S E3,E4
E URSINI F/AU
L3 188 S E3,E4
E ROVERI A/AU
L4 43 S E3,E4

FILE 'REGISTRY' ENTERED AT 12:40:38 ON 13 AUG 2003
L5 1 S 97089-70-8

FILE 'HCAPLUS' ENTERED AT 12:41:12 ON 13 AUG 2003
L6 247 S L5

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L7          41 S SELENOPEROXIDASE OR SELENO PEROXIDASE OR (EC OR "E C")()1 11
L8         321 S PHOSPHOLIPID HYDROPEROXID# GLUTATHION# PEROXIDASE
L9         192 S PHGPX
L10        358 S L6-L9
L11        219 S L10 AND (PD<=19990309 OR PRD<=19990309 OR AD<=19990309)
L12         60 S L2-L4 AND L10
L13         48 S L11 AND L12
L14         12 S L12 NOT L13
               SEL DN AN L13 1 2
L15          2 S L13 AND E1-E6
L16          2 S L1,L15
               E SPERM/CT
L17          9 S E3-E18 AND L11
               E E3+ALL
               E E15+ALL
               E E21+ALL
               E FERTILITY/CT
               E E3+ALL
               E TESTIS/CT
               E E3+ALL
L18         32 S E12,E11+NT AND L11
               E E21+ALL
L19          1 S E3 AND L11
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               E E22+ALL
L20          1 S E4,E5,E3+NT AND L11
               E FERTILITY/CT
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L21          2 S E3 AND L11
               E E6+ALL
L22          2 S E1 AND L11
               E E8+ALL
L23          0 S E3 AND L11
               E E7+ALL
L24          9 S E3,E2+NT AND L11
               E E40+ALL
L25         34 S E4+NT AND L11
L26         42 S L11 AND (SPERM? OR TESTES OR TESTIS OR SEMEN)
L27         44 S L17-L26
L28         12 S L27 AND (PATTERN OR BIOLOGICAL SAMPLE OR MATURATION OR PUBERT
               SEL DN AN 1-3 6 7 11 12
L29          7 S L28 AND E1-E21
L30          7 S L16,L29
L31         10 S L6 (L) (ANT OR ANST)/RL
L32         12 S L6 (L) USES/RL
L33        224 S L6 (L) BIOL/RL
L34          2 S L31,L32 AND L30
L35         11 S L32,L32 NOT L34
L36          3 S L35 AND L11
L37          1 S WO9613225/PN
L38          1 S MAIORINO ?/AU AND 1998/PY AND FASEB?/JT AND (12 AND 1359)/SO
L39          1 S MAIORINO ?/AU AND 1990/PY AND ("METHODS IN ENZYM?")/JT AND (1
L40          1 S ROVERI ?/AU AND 1994/PY AND ("METHODS IN ENZYM?")/JT AND (233
L41          1 S URSINI F?/AU AND 1999/PY AND SCIENCE?/JT AND (285 AND 1393)/S
L42          4 S L37-L41 AND L1-L4,L6-L36
L43          5 S L37-L42
L44         11 S L30,L34,L43
L45         11 S L44 AND L1-L4,L6-L44

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L46          1 S 57-13-6
L47          1 S 50-01-1
L48          1 S 593-84-0
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L49           1 S 113-00-8
L50        2351 S 113-00-8/CRN
L51           1 S 60-24-2
L52           1 S 3483-12-3
L53           1 S 6892-68-8
L54          51 S C4H10O2S2/MF
L55           7 S L54 AND 2 3 BUTANEDIOL
L56           5 S L55 NOT (D/ELS OR 35)
                SEL RN
L57          28 S E2-E26/CRN
L58           9 S L57 AND (NA/ELS OR 57-13-6/CRN OR K/ELS OR MXS/CI)
L59           7 S L58 NOT C6/ES
L60           6 S L59 NOT UNSPECIFIED
L61         107 S L50 NOT ((PMS OR MXS OR AYS OR IDS OR MNS)/CI OR COMPD OR WIT
L62         110 S L46-L49,L61
L63          12 S L51-L53,L56,L60

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L64       11185 S L63
L65       72894 S L62
L66           6 S L10 AND L64
L67           2 S L10 AND L65
L68           7 S L66,L67
L69           5 S L68 NOT (MYELOID OR OSBECK)
L70           4 S L69 NOT ALS
L71          14 S L45,L70
L72          12 S L71 AND L11
L73          14 S L71,L72
                E DETERGENT/CT
L74           1 S E12-E56 AND L10
                E E12+ALL
L75           1 S L10 AND E4,E5,E3+NT
L76          11 S L10 AND DETERGENT
L77          11 S L11 AND L74-L76
L78           2 S L77 AND L73
L79           9 S L77 NOT L78
                SEL DN AN 5 8
L80           2 S L79 AND E1-E6
L81          16 S L73,L74,L75,L78,L80
L82          20 S L10 AND THIOL
L83           4 S L82 AND L81
L84          16 S L82 NOT L83
L85           8 S L11 AND L84
                SEL DN AN 1 2 5 8
L86           4 S L85 AND E7-E18
L87          20 S L81,L83,L86 AND L1-L4,L6-L45,L64-L86
                SEL HIT RN

     FILE 'REGISTRY' ENTERED AT 14:02:37 ON 13 AUG 2003
L88           7 S E19-E25

     FILE 'REGISTRY' ENTERED AT 14:02:55 ON 13 AUG 2003

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 14:03:04 ON 13 AUG 2003
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FILE COVERS 1907 - 13 Aug 2003 VOL 139 ISS 7
FILE LAST UPDATED: 12 Aug 2003 (20030812/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d l87 all hitstr tot

L87 ANSWER 1 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:798535 HCAPLUS
DN 138:102779
TI A Comparative Study on the Hydroperoxide and **Thiol** Specificity of the Glutathione Peroxidase Family and Selenoprotein P
AU Takebe, Gen; Yarimizu, Junko; Saito, Yoshiro; Hayashi, Takaaki; Nakamura, Hajime; Yodoi, Junji; Nagasawa, Shigeharu; Takahashi, Kazuhiko
CS Graduate School of Pharmaceutical Sciences, Department of Hygienic Chemistry, Hokkaido University, Kita-ku, Sapporo, 060-0812, Japan
SO Journal of Biological Chemistry (2002), 277(43), 41254-41258
CODEN: JBCHA3; ISSN: 0021-9258
PB American Society for Biochemistry and Molecular Biology
DT Journal
LA English
CC 7-3 (Enzymes)
AB Glutathione peroxidase catalyzes the redn. of hydrogen peroxide and org. hydroperoxide by glutathione and functions in the protection of cells against oxidative damage. Glutathione peroxidase exists in several forms that differ in their primary structure and localization. We have also shown that selenoprotein P exhibits a glutathione peroxidase-like activity (Saito, Y., Hayashi, T., Tanaka, A., Watanabe, Y., Suzuki, M., Saito, E., and Takahashi, K. (1999) J. Biol. Chem. 274, 2866-2871). To understand the physiol. significance of the diversity among these enzymes, a comparative study on the peroxide substrate specificity of three types of ubiquitous glutathione peroxidase (cellular glutathione peroxidase, **phospholipid hydroperoxide glutathione peroxidase**, and extracellular glutathione peroxidase) and of selenoprotein P purified from human origins was done. The specific activities and kinetic parameters against two hydroperoxides (hydrogen peroxide and phosphatidylcholine hydroperoxide) were detd. We next examd. the **thiol** specificity and found that thioredoxin is the preferred electron donor for selenoprotein P. These four enzymes exhibit different peroxide and **thiol** specificities and collaborate to protect biol. mols. from oxidative stress both inside and outside the cells.
ST glutathione peroxidase selenoprotein P hydroperoxide **thiol** specificity
IT Thioredoxins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(as electron donor; comparative study addresses hydroperoxide and **thiol** specificity of human glutathione peroxidases and human selenoprotein P)
IT Enzyme kinetics
Human
(comparative study addresses hydroperoxide and **thiol** specificity of human glutathione peroxidases and human selenoprotein P)
IT Phosphatidylcholines, biological studies

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(hydroperoxy; comparative study addresses hydroperoxide and **thiol** specificity of human glutathione peroxidases and human selenoprotein P)

IT Hydroperoxides
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(phosphatidylcholine; comparative study addresses hydroperoxide and **thiol** specificity of human glutathione peroxidases and human selenoprotein P)

IT Proteins
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(selenium-contg., P; comparative study addresses hydroperoxide and **thiol** specificity of human glutathione peroxidases and human selenoprotein P)

IT 52-90-4, L-Cysteine, biological studies **60-24-2**, Mercaptoethanol 70-18-8, Glutathione, biological studies **3483-12-3**, Dithiothreitol
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(as electron donor; comparative study addresses hydroperoxide and **thiol** specificity of human glutathione peroxidases and human selenoprotein P)

IT 75-91-2, tert-Butyl hydroperoxide 7722-84-1, Hydrogen peroxide, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(comparative study addresses hydroperoxide and **thiol** specificity of human glutathione peroxidases and human selenoprotein P)

IT 9013-66-5, Glutathione peroxidase **97089-70-8**, **Phospholipid hydroperoxide glutathione peroxidase**
RL: BSU (Biological study, unclassified); PRP (Properties); **BIOL (Biological study)**
(comparative study addresses hydroperoxide and **thiol** specificity of human glutathione peroxidases and human selenoprotein P)

RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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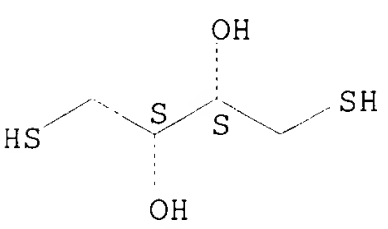
(39) Yamamoto, Y; Arch Biochem Biophys 1993, V305, P541 HCAPLUS
(40) Yarimizu, J; Antioxid Redox Signal 2000, V2, P643 HCAPLUS

IT **60-24-2**, Mercaptoethanol **3483-12-3**, Dithiothreitol
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(as electron donor; comparative study addresses hydroperoxide and **thiol** specificity of human glutathione peroxidases and human selenoprotein P)
RN 60-24-2 HCAPLUS
CN Ethanol, 2-mercapto- (8CI, 9CI) (CA INDEX NAME)



RN 3483-12-3 HCAPLUS
CN 2,3-Butanediol, 1,4-dimercapto-, (2R,3R)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: BSU (Biological study, unclassified); PRP (Properties); **BIOL (Biological study)**
(comparative study addresses hydroperoxide and **thiol** specificity of human glutathione peroxidases and human selenoprotein P)
RN 97089-70-8 HCAPLUS
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L87 ANSWER 2 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN **2000:646244** HCAPLUS
DN **133:189864**
TI Method to detect male **antifertility** problems
IN **Flohe, Leopold; Ursini, Fulvio; Roveri, Antonella**
PA Germany
SO PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N033-573
ICS G01N033-561; C12Q001-28

CC 7-1 (Enzymes)
Section cross-reference(s): 14
FAN.CNT 1

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PI	WO 2000054054	A1	20000914	WO 2000-EP1877	20000306 <--
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	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1159617	A1	20011205	EP 2000-910773	20000306 <--
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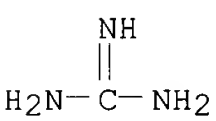
	JP 2002538791	T2	20021119	JP 2000-604228	20000306 <--
	NZ 513245	A	20030228	NZ 2000-513245	20000306 <--
	AU 761695	B2	20030605	AU 2000-32863	20000306 <--
PRAI	EP 1999-103959	A	19990309 <--		
	WO 2000-EP1877	W	20000306 <--		

AB The invention relates to a method to detect male antifertility problems based on the detn. of latent **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**).
ST detect antifertility
IT Denaturants
(chaotropic; method to detect male antifertility problems)
IT **Fertility**
(male, disorder, antifertility; method to detect male antifertility problems)
IT **Detergents**
Diagnosis
Fertilization
Gel permeation chromatography
Immunoassay
Livestock
Solubilization
Sperm
(method to detect male antifertility problems)
IT Reagents
Thiols (organic), biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(method to detect male antifertility problems)
IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: **ANT (Analyte)**; THU (Therapeutic use); **ANST (Analytical study)**; **BIOL (Biological study)**; **USES (Uses)**
(method to detect male antifertility problems)
IT **50-01-1**, Guanidine chloride **57-13-6**, Urea, biological studies **60-24-2**, 2-Mercaptoethanol **593-84-0**, Guanidine thiocyanate **3483-12-3**, Dithiothreitol **6892-68-8**, Dithioerythritol
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(method to detect male antifertility problems)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Beth Israel Hospital; WO 9613225 A 1996 HCAPLUS
(2) Maiorino, M; FASEB J 1998, V12, P1359 HCAPLUS
(3) Maiorino, M; METHODS ENZYMOL 1990, V186, P448 HCAPLUS
(4) Roveri, A; METHODS ENZYMOL 1994, V233, P202 HCAPLUS

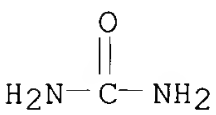
(5) Ursini, F; SCIENCE 1999, V285, P1393 HCAPLUS
IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: **ANT (Analyte)**; THU (Therapeutic use); **ANST (Analytical study); BIOL (Biological study); USES (Uses)**
(method to detect male antifertility problems)
RN 97089-70-8 HCAPLUS
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **50-01-1**, Guanidine chloride **57-13-6**, Urea, biological studies **60-24-2**, 2-Mercaptoethanol **593-84-0**, Guanidine thiocyanate **3483-12-3**, Dithiothreitol **6892-68-8**, Dithioerythritol
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(method to detect male antifertility problems)
RN 50-01-1 HCAPLUS
CN Guanidine, monohydrochloride (8CI, 9CI) (CA INDEX NAME)

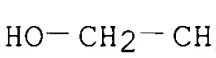


HCl

RN 57-13-6 HCAPLUS
CN Urea (8CI, 9CI) (CA INDEX NAME)



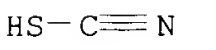
RN 60-24-2 HCAPLUS
CN Ethanol, 2-mercapto- (8CI, 9CI) (CA INDEX NAME)



RN 593-84-0 HCAPLUS
CN Thiocyanic acid, compd. with guanidine (1:1) (7CI, 8CI, 9CI) (CA INDEX NAME)

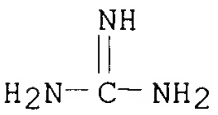
CM 1

CRN 463-56-9
CMF C H N S



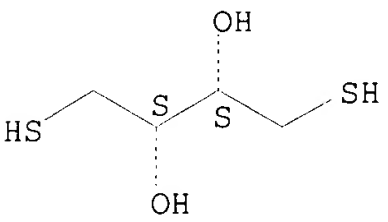
CM 2

CRN 113-00-8
CMF C H5 N3



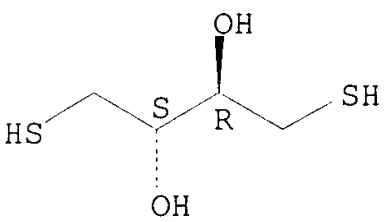
RN 3483-12-3 HCAPLUS
CN 2,3-Butanediol, 1,4-dimercapto-, (2R,3R)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 6892-68-8 HCAPLUS
CN 2,3-Butanediol, 1,4-dimercapto-, (2R,3S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L87 ANSWER 3 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN **2000:646177** HCAPLUS
DN **133:189863**
TI Method to search for male **antifertility** drugs based on **PHGPx** activity determination
IN **Flohe, Leopold; Ursini, Fulvio**
PA Germany
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12Q001-28
CC 7-1 (Enzymes)
Section cross-reference(s): 1
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2000053800	A1	20000914	WO 2000-EP1878	20000306	<--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG					
	EP 1159445	A1	20011205	EP 2000-910774	20000306	<--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
PRAI EP 1999-103960 A 19990309 <--
WO 2000-EP1878 W 20000306
AB The invention relates to a method to search for male antifertility drugs based on activity detn. of **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) derived from human tissue or human cells or from related mammalian species.
ST antifertility drug **PHGPx** activity detn; **phospholipid hydroperoxide glutathione peroxidase**
IT Drug delivery systems
(carriers, Pharmaceutically acceptable; method to search for male antifertility drugs based on **PHGPx** activity detn.)
IT **Fertility**
(inhibitors, male; method to search for male antifertility drugs based on **PHGPx** activity detn.)
IT Animal cell
Animal tissue
Computer application
Genetic engineering
Mammal (Mammalia)
(method to search for male antifertility drugs based on **PHGPx** activity detn.)
IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: **ANT (Analyte)**; BSU (Biological study, unclassified); **ANST (Analytical study)**; **BIOL (Biological study)**
(method to search for male antifertility drugs based on **PHGPx** activity detn.)
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Beth Israel Hospital Association; WO 9613225 A 1996 HCAPLUS
(2) Maiorino, M; FASEB J 1998, V12, P1359 HCAPLUS
(3) Maiorino, M; METHODS ENZYMOL 1990, V186, P448 HCAPLUS
(4) Roveri, A; METHODS ENZYMOL 1994, V233, P202 HCAPLUS
IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: **ANT (Analyte)**; BSU (Biological study, unclassified); **ANST (Analytical study)**; **BIOL (Biological study)**
(method to search for male antifertility drugs based on **PHGPx** activity detn.)
RN 97089-70-8 HCAPLUS
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L87 ANSWER 4 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN **1999:768506** HCAPLUS
DN **132:33617**
TI Tissue-specific functions of individual glutathione peroxidases
AU Brigelius-Flohe, Regina
CS German Institute of Human Nutrition, Rehbrucke, D-14558, Germany
SO Free Radical Biology & Medicine (**1999**), 27(9/10), 951-965
CODEN: FRBMEH; ISSN: 0891-5849
PB Elsevier Science Inc.
DT Journal; General Review
LA English
CC 13-0 (Mammalian Biochemistry)
AB A discussion and review with 165 refs. The family of glutathione peroxidases comprises four distinct mammalian selenoproteins. The classical enzyme (cGPx) is ubiquitously distributed. According to animal, cell culture and inverse genetic studies, its primary function is to

counteract oxidative attack. It is distensible in unstressed animals, and accordingly ranks low in the hierarchy of glutathione peroxidases. The gastrointestinal isoenzyme (GI-GPx) is most related to cGPx and is exclusively expressed in the gastrointestinal tract. It might provide a barrier against hydroperoxides derived from the diet or from metab. of ingested xenobiotics. The extreme stability in selenium deficiency ranks this glutathione peroxidase highest in the hierarchy of selenoproteins and points to a more vital function than that of cGPx. Plasma GPx (pGPx) behaves similar to cGPx in selenium deficiency. It is directed to extracellular compartments and is expressed in various tissues in contact with body fluids, e.g., kidney, ciliary body, and maternal/fetal interfaces. It has to be rated as an efficient extracellular antioxidant device, though with low capacity because of the limited extracellular content of potential **thiol** substrates. **Phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**), originally presumed to be a universal antioxidant enzyme protecting membrane lipids, appears to have adopted a variety of specific roles like silencing lipoxygenases and becoming an enzymically inactive structural component of the mitochondrial capsule during **sperm** maturation. Thus, all individual isoenzymes are efficient peroxidases in principle, but beyond their mere antioxidant potential may exert cell- and tissue-specific roles in metabolic regulation, as is evident for **PHGPx** and may be expected for others.

ST review glutathione peroxidases tissue antioxidant

IT Animal tissue
Antioxidants
(tissue-specific functions of individual glutathione peroxidases)

IT 9013-66-5, Glutathione peroxidase
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); PROC (Process); USES (Uses)
(tissue-specific functions of individual glutathione peroxidases)

RE.CNT 165 THERE ARE 165 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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(2) Avissar, N; Am J Physiol 1994, V267, PE68 HCAPLUS
(3) Avissar, N; Am J Physiol 1996, V270, PL173 HCAPLUS
(4) Avissar, N; J Nutr 1991, V121, P1243 HCAPLUS
(5) Aw, T; J Clin Invest 1994, V94, P1218 HCAPLUS
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L87 ANSWER 5 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1999:660621 HCAPLUS
DN 132:21154
TI Regulation of stress-induced **phospholipid hydroperoxide glutathione peroxidase** expression in citrus
AU Avsian-Kretchmer, Orna; Eshdat, Yuval; Gueta-Dahan, Yardena; Ben-Hayyim, Gozal
CS Department of Fruit-Tree Breeding and Molecular Genetics, The Volcani Center, Agricultural Research Organization, Bet Dagan, 50250, Israel
SO Planta (**1999**), 209(4), 469-477
CODEN: PLANAB; ISSN: 0032-0935
PB Springer-Verlag
DT Journal
LA English
CC 11-8 (Plant Biochemistry)
AB Recent findings in the authors' lab. showed that in citrus cells, salt treatment induced the accumulation of mRNA and a protein corresponding to **phospholipid hydroperoxide glutathione peroxidase** (**PHGPX**), an enzyme active in the cellular antioxidant system. The protein and its encoding gene, csa, were isolated and characterized, and the expected enzymic activity was demonstrated (Ben-Hayyim, G. et al., 1993; Holland, D. et al., 1993, 1994; Beeor-Tzahar, T. et al., 1995). In an attempt to find out how salt induces the expression of an antioxidant enzyme, the regulation of **PHGPX** in citrus cells was studied at both the mRNA transcript and the protein levels. A high and transient response at the csa mRNA level was obsd. after 4-7 h of exposing salt-sensitive cells to NaCl, or abscisic acid, whereas no response could be detected in the salt-tolerant cells under the same conditions. Tert-Butylhydroperoxide, a substrate of **PHGPX**, induced csa mRNA transcripts after only 2 h, and abolished the differential response between salt-sensitive and salt-tolerant cells. On the basis of these results and those obtained under heat and cold stresses, it is suggested that csa is directly induced by the substrate of its encoded enzyme **PHGPX**, and that salt induction occurs mainly via the prodn. of reactive oxygen species and hydroperoxides.
ST stress induction antioxidant enzyme citrus; **phospholipid hydroperoxide glutathione peroxidase** citrus stress; salt stress induction antioxidant enzyme citrus; gene csa expression citrus stress
IT Enzymes, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(antioxidant; regulation of stress-induced **phospholipid hydroperoxide glutathione peroxidase** expression in citrus)
IT Temperature effects, biological
(heat; regulation of stress-induced **phospholipid hydroperoxide glutathione peroxidase**

expression in citrus)
IT Transcriptional regulation
(regulation of stress-induced **phospholipid hydroperoxide glutathione peroxidase** expression in citrus)
IT Gene, plant
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(regulation of stress-induced **phospholipid hydroperoxide glutathione peroxidase** expression in citrus)
IT mRNA
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(regulation of stress-induced **phospholipid hydroperoxide glutathione peroxidase** expression in citrus)
IT Antioxidants
(salt-induced **phospholipid hydroperoxide glutathione peroxidase** expression in citrus response to)
IT Stress, plant
(salt; regulation of stress-induced **phospholipid hydroperoxide glutathione peroxidase** expression in citrus)
IT Orange
(sweet, Shamouti; regulation of stress-induced **phospholipid hydroperoxide glutathione peroxidase** expression in citrus)
IT 7440-09-7, Potassium, biological studies 7440-23-5, Sodium, biological studies 16887-00-6, Chloride, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(of citrus cells during exposure to sodium chloride in relation to salt tolerance)
IT 7647-14-5, Sodium chloride (NaCl), biological studies
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(regulation of stress-induced **phospholipid hydroperoxide glutathione peroxidase** expression in citrus)
IT 75-91-2, tert-Butylhydroperoxide 21293-29-8, Abscisic acid
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(regulation of stress-induced **phospholipid hydroperoxide glutathione peroxidase** expression in citrus)
IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); **BIOL (Biological study)**; FORM (Formation, nonpreparative); PROC (Process)
(regulation of stress-induced **phospholipid hydroperoxide glutathione peroxidase** expression in citrus)
IT 520-18-3, Kaempferol **3483-12-3**, DTT
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(salt-induced **phospholipid hydroperoxide glutathione peroxidase** expression in citrus response to)
RE.CNT 64 THERE ARE 64 CITED REFERENCES AVAILABLE FOR THIS RECORD
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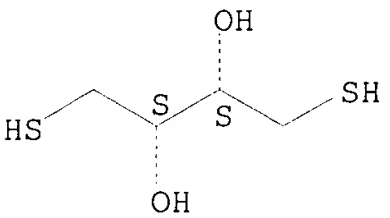
IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); **BIOL (Biological study)**; FORM (Formation, nonpreparative); PROC (Process)
(regulation of stress-induced **phospholipid hydroperoxide glutathione peroxidase** expression in citrus)
RN 97089-70-8 HCAPLUS
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **3483-12-3**, DTT
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(salt-induced **phospholipid hydroperoxide glutathione peroxidase** expression in citrus response to)
RN 3483-12-3 HCAPLUS
CN 2,3-Butanediol, 1,4-dimercapto-, (2R,3R)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L87 ANSWER 6 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN **1999:572961** HCAPLUS
DN **131:284540**
TI Dual function of the selenoprotein **PHGPx** during **sperm maturation**
AU **Ursini, Fulvio**; Heim, Sabina; Kiess, Michael; Maiorino, Matilde; **Roveri, Antonella**; Wissing, Josef; **Flohe, Leopold**
CS Dipartmento di Chimica Biologica, Universita di Padova, Padua, 1-35121, Italy
SO **Science (Washington, D. C.)** (**1999**), **285** (5432), **1393**-1396
CODEN: SCIEAS; ISSN: 0036-8075
PB American Association for the Advancement of Science
DT Journal
LA English
CC 13-6 (Mammalian Biochemistry)
AB The selenoprotein **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) changes its phys. characteristics and biol. functions during **sperm** maturation. **PHGPx** exists as a sol. peroxidase in **spermatids** but persists in mature **spermatozoa** as an enzymically inactive, oxidatively cross-linked, insol. protein. In the midpiece of mature **spermatozoa, PHGPx** protein represents at Least 50 percent of the capsule material that embeds the helix of mitochondria. The role of **PHGPx** as a structural protein may explain the mech. instability of the mitochondrial midpiece that is obsd. in selenium deficiency.
ST selenoprotein **PHGPx** mitochondria **sperm** maturation
IT Mitochondria

Sperm
Spermatogenesis
(dual function of selenoprotein **PHGPx** during **sperm** maturation)

IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); **BIOL (Biological study)**; OCCU (Occurrence); PROC (Process)
(dual function of selenoprotein **PHGPx** during **sperm** maturation)

IT 7782-49-2, Selenium, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(dual function of selenoprotein **PHGPx** during **sperm** maturation)

RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD

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IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: BAC (Biological activity or effector, except adverse); BOC (Biological

occurrence); BPR (Biological process); BSU (Biological study, unclassified); **BIOL (Biological study)**; OCCU (Occurrence); PROC (Process)
(dual function of selenoprotein **PHGPx** during **sperm** maturation)
RN 97089-70-8 HCAPLUS
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L87 ANSWER 7 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1998:664552 HCAPLUS
DN 130:10799
TI Testosterone mediates expression of the selenoprotein **PHGPx** by induction of **spermatogenesis** and not by direct transcriptional gene activation
AU **Maiorino, Matilde**; Wissing, Josef B.; Brigelius-Flohe, Regina; Calabrese, Fiorella; **Roveri, Antonella**; Steinert, Peter; **Ursini, Fulvio**; **Flohe, Leopold**
CS Dipartimento di Chimica Biologica, Padua, I-35121, Italy
SO **FASEB Journal** (**1998**), **12**(13), **1359**-1370
CODEN: FAJOEC; ISSN: 0892-6638
PB Federation of American Societies for Experimental Biology
DT Journal
LA English
CC 2-4 (Mammalian Hormones)
AB Selenium deficiency is known to be assocd. with male infertility, and the selenoprotein **PHGPx** has been shown to increase in rat **testis** after puberty and to depend on gonadotropin stimulation in hypophysectomized rats. Exposure of decapsulated whole **testis**, however, failed to reveal any transcriptional activation or inhibition of the **PHGPx** gene by testosterone, human chorionic gonadotropin, or forskolin. Nevertheless, it was verified that the specific activity of **PHGPx** in **testis**, but not of cGPx, correlated with sexual maturation. Leydig cell destruction in vivo by ethane dimethane sulfonate (EDS) resulted in a delayed decrease in **PHGPx** activity and mRNA that could be completely prevented by testosterone substitution. The cGPx transiently increased upon EDS treatment, probably as a result of reactive macrophage augmentation. In situ mRNA hybridization studies demonstrated an uncharacteristic low level of cGPx transcription in **testis**, whereas **PHGPx** mRNA was abundantly and preferentially expressed in round **spermatids**. The data show that the age or gonadotropin-dependent expression of **PHGPx** in **testis** does not result from direct transcriptional gene activation by testosterone, but is due to differentiation stage-specific expression in late **spermatids**, which are under the control of Leydig cell-derived testosterone. The striking burst of **PHGPx** expression at the transition of round to elongated **spermatids** suggests an involvement of this selenoprotein in **sperm** maturation.
ST testosterone **PHGPx** selenoprotein expression **testis** **spermatogenesis**; transcriptional activation **PHGPx** gene expression testosterone
IT **Testis**
(Leydig cell; testosterone mediates expression of selenoprotein **PHGPx** in **testis** by induction of **spermatogenesis** independent of transcriptional gene activation)
IT Transcriptional regulation
(activation; testosterone mediates expression of selenoprotein **PHGPx** in **testis** by induction of **spermatogenesis** independent of transcriptional gene activation)

IT Gene
(expression; testosterone mediates expression of selenoprotein **PHGPx** in **testis** by induction of **spermatogenesis** independent of transcriptional gene activation)
IT **Sperm**
(**spermatid, round**; testosterone mediates expression of selenoprotein **PHGPx** in **testis** by induction of **spermatogenesis** independent of transcriptional gene activation)
IT **Sperm**
(**spermatid**; testosterone mediates expression of selenoprotein **PHGPx** in **testis** by induction of **spermatogenesis** independent of transcriptional gene activation)
IT Development, mammalian postnatal
Spermatogenesis
Transcriptional regulation
(testosterone mediates expression of selenoprotein **PHGPx** in **testis** by induction of **spermatogenesis** independent of transcriptional gene activation)
IT Estrogens
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(testosterone mediates expression of selenoprotein **PHGPx** in **testis** by induction of **spermatogenesis** independent of transcriptional gene activation)
IT 58-22-0, Testosterone 60-92-4, CAMP 9002-61-3, Chorionic gonadotropin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(testosterone mediates expression of selenoprotein **PHGPx** in **testis** by induction of **spermatogenesis** independent of transcriptional gene activation)
IT 9013-66-5, Glutathione peroxidase **97089-70-8**,
Phospholipid Hydroperoxide glutathione peroxidase
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); **BIOL (Biological study)**; FORM (Formation, nonpreparative); PROC (Process)
(testosterone mediates expression of selenoprotein **PHGPx** in **testis** by induction of **spermatogenesis** independent of transcriptional gene activation)
RE.CNT 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD
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IT **97089-70-8, Phospholipid Hydroperoxide glutathione peroxidase**
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); **BIOL (Biological study)**; FORM (Formation, nonpreparative); PROC (Process)
(testosterone mediates expression of selenoprotein **PHGPx** in **testis** by induction of **spermatogenesis** independent of transcriptional gene activation)
RN 97089-70-8 HCAPLUS
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L87 ANSWER 8 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN **1998:217743** HCAPLUS
DN **128:227659**
TI Attempt to differentiate between individual glutathione peroxidases in **biological samples**
AU Maurer, S.; Friedrich, C.; Leist, M.; Maiorino, M.; Brigelius-Flohe, R.
CS German Inst. Human Nutrition, Bergholz-Rehbruecke, D-14558, Germany
SO Zeitschrift fuer Ernaehrungswissenschaft (**1998**), 37(Suppl. 1), 110-113
CODEN: ZERNAL; ISSN: 0044-264X
PB Dr. Dietrich Steinkopff Verlag GmbH & Co. KG
DT Journal
LA English
CC 7-1 (Enzymes)
AB We developed a simple procedure for the differential estn. of the major cellular types of glutathione peroxidases (GPx), the cytosolic GPx (cGPx) and the **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) taking advantage of the peculiar susceptibility of **PHGPx** to deoxycholate. It proved to reliably

det. the activities of both purified cGPx and **PHGPx**, in mixts. thereof, and in homogenates of tissue samples (e.g., **testes**), and some (e.g. ECV 304) but not all (e.g. THP-1) cultured cell lines. The method allows the differential estn. of cGPx and **PHGPx**, if the samples do not contain further types of GPx.

ST glutathione peroxidase phospholipid hydroperoxide glutathione cell

IT 9013-66-5, Glutathione peroxidase **97089-70-8**, **Phospholipid hydroperoxide glutathione peroxidase**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); **BIOL (Biological study)**; OCCU (Occurrence)
(cytosolic glutathione peroxidase and the **phospholipid hydroperoxide glutathione peroxidase** differentiation in cell lines)

IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); **BIOL (Biological study)**; OCCU (Occurrence)
(cytosolic glutathione peroxidase and the **phospholipid hydroperoxide glutathione peroxidase** differentiation in cell lines)

RN 97089-70-8 HCAPLUS

CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

1/27

L87 ANSWER 9 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN

AN **1997:782212** HCAPLUS

DN **128:87032**

TI **Distribution** and possible novel role of **phospholipid hydroperoxide glutathione peroxidase** in rat epididymal **spermatozoa**

AU Godeas, Cristiana; Tramer, Federica; Micali, Fulvio; Soranzo, Mariarosa; Sandri, Gabriella; Panfili, Enrico

CS Dep. Biochem., Biophys. Macromolecular Chem., Inst. General Pathol., Univ. Trieste, Trieste, 34127, Italy

SO Biology of Reproduction (**1997**), 57(6), 1502-1508
CODEN: BIREBV; ISSN: 0006-3363

PB Society for the Study of Reproduction

DT Journal

LA English

CC 13-6 (Mammalian Biochemistry)

AB The selenoenzyme **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**, **EC 1.11.1.12**) is present, in both free and membrane-bound form, in several mammalian tissues. It utilizes **thiols** such as glutathione to specifically scavenge phospholipid hydroperoxides. The **testis** exhibits the highest **PHGPx** -specific activity so far measured, and interest in the presence and function of the enzyme in this tissue has recently grown. Here we report the localization of **PHGPx** in rat epididymal **spermatozoa** and its distribution in subfractions obtained by sucrose d. gradient centrifugation. Immunochem. evidence and enzymic activity revealed for the first time that **PHGPx** is present in **sperm** heads and tail midpiece mitochondria. The binding of the enzyme to **spermatozoa**, head, and mitochondria was barely affected by ionic strength or **thiols** or **detergent**, as compared to the detachment of **PHGPx** obtained from **testis** nuclei. Moreover, we demonstrated that pure **PHGPx** exhibits a higher thioloxidase activity toward isolated epididymal caput protamines than toward protamines from epididymal cauda. These results suggest a role for the enzyme in the maturation of **spermatozoa** through the metab.

of hydroperoxides and **sperm thiol** oxidn., in addn. to its serving as an antioxidant protector.

ST **phospholipid hydroperoxide glutathione peroxidase** epididymis **spermatozoa**

IT **Epididymis**
(caput; distribution and possible novel role of **phospholipid hydroperoxide glutathione peroxidase** in rat epididymal **spermatozoa**)

IT **Epididymis**
(cauda; distribution and possible novel role of **phospholipid hydroperoxide glutathione peroxidase** in rat epididymal **spermatozoa**)

IT Mitochondria
Sperm
Spermatogenesis
(distribution and possible novel role of **phospholipid hydroperoxide glutathione peroxidase** in rat epididymal **spermatozoa**)

IT Protamines
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(distribution and possible novel role of **phospholipid hydroperoxide glutathione peroxidase** in rat epididymal **spermatozoa**)

IT **Sperm**
(**head**; distribution and possible novel role of **phospholipid hydroperoxide glutathione peroxidase** in rat epididymal **spermatozoa**)

IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); **BIOL (Biological study)**; OCCU (Occurrence); PROC (Process)
(distribution and possible novel role of **phospholipid hydroperoxide glutathione peroxidase** in rat epididymal **spermatozoa**)

RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD

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IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); **BIOL (Biological study)**; OCCU (Occurrence); PROC (Process)
(distribution and possible novel role of **phospholipid hydroperoxide glutathione peroxidase** in rat epididymal **spermatozoa**)

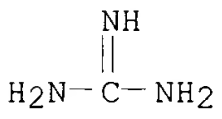
RN 97089-70-8 HCAPLUS
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

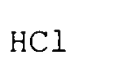
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L87 ANSWER 10 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1997:624848 HCAPLUS
DN 127:306198
TI Glutathione metabolism in uremic rat
AU Rao, S. V. Raman; Indira, K.
CS Division of Molecular Biology, Department of Zoology, S. V. University, Tirupati, 517 502, India
SO Drug and Chemical Toxicology (1977) (**1997**), 20(3), 229-237
CODEN: DCTODJ; ISSN: 0148-0545
PB Dekker
DT Journal
LA English
CC 14-12 (Mammalian Pathological Biochemistry)
AB The impact of guanidine hydrochloride, a uremic toxin, has been investigated on glutathione mediated antioxidant defense mechanisms in rat liver and kidney. Elevated glutathione-S-transferase (GST) activity in the tissue of guanidine treated rat indicates its active participation in the detoxification of uremic toxin involving glutathione. Glutathione (GSH) is replenished by elevated glutathione reductase and peroxides formed are subsequently detoxified by augmented selenium and non-selenium dependent glutathione peroxidase activities.
ST glutathione metab uremia guanidine enzyme
IT Kidney, disease
(failure; glutathione metab. in uremic rat in relation to guanidine hydrochloride (uremic toxin) and enzymes)
IT Kidney
Liver
(glutathione metab. in uremic rat in relation to guanidine hydrochloride (uremic toxin) and enzymes)
IT Toxins
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(uremic; glutathione metab. in uremic rat in relation to guanidine hydrochloride (uremic toxin) and enzymes)

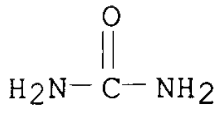
IT **50-01-1**, Guanidine hydrochloride
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(glutathione metab. in uremic rat in relation to guanidine hydrochloride (uremic toxin) and enzymes)
IT 9001-48-3, Glutathione reductase 50812-37-8, Glutathione S-transferase
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(glutathione metab. in uremic rat in relation to guanidine hydrochloride (uremic toxin) and enzymes)
IT 70-18-8, Reduced glutathione, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(glutathione metab. in uremic rat in relation to guanidine hydrochloride (uremic toxin) and enzymes)
IT **57-13-6**, Urea, biological studies
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(metabolic disorders, uremia; glutathione metab. in uremic rat in relation to guanidine hydrochloride (uremic toxin) and enzymes)
IT 9013-66-5, Glutathione peroxidase **97089-70-8**, **Phospholipid hydroperoxide glutathione peroxidase**
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); **BIOL (Biological study)**; OCCU (Occurrence); PROC (Process)
(selenium-dependent and -independent; glutathione metab. in uremic rat in relation to guanidine hydrochloride (uremic toxin) and enzymes)

IT **50-01-1**, Guanidine hydrochloride
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(glutathione metab. in uremic rat in relation to guanidine hydrochloride (uremic toxin) and enzymes)
RN 50-01-1 HCAPLUS
CN Guanidine, monohydrochloride (8CI, 9CI) (CA INDEX NAME)





IT **57-13-6**, Urea, biological studies
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(metabolic disorders, uremia; glutathione metab. in uremic rat in relation to guanidine hydrochloride (uremic toxin) and enzymes)
RN 57-13-6 HCAPLUS
CN Urea (8CI, 9CI) (CA INDEX NAME)



IT **97089-70-8, Phospholipid hydroperoxide**

glutathione peroxidase
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); **BIOL (Biological study)**; OCCU (Occurrence); PROC (Process)
(selenium-dependent and -independent; glutathione metab. in uremic rat in relation to guanidine hydrochloride (uremic toxin) and enzymes)
RN 97089-70-8 HCAPLUS
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L87 ANSWER 11 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN **1997:49619** HCAPLUS
DN **126:142313**
TI **Phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) in rat **testis** nuclei is bound to chromatin
AU Godeas, Cristiana; Tramer, Federica; Micali, Fulvio; **Roveri, Antonella**; Maiorino, Matilde; Nisii, Carla; Sandri, Gabriella; Panfili, Enrico
CS Dep. Biochem., Biophys. Macromolecular Chem., Univ. Trieste, Trieste, I-34127, Italy
SO Biochemical and Molecular Medicine (**1996**), 59(2), 118-124
CODEN: BMMEF4; ISSN: 1077-3150
PB Academic
DT Journal
LA English
CC 13-1 (Mammalian Biochemistry)
AB In rat **testis** nuclei the activity of the selenoenzyme **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx, EC 1.11.1.12**) is much higher than in other tissues and subcellular compartments, with the sole exception of mitochondria. In nuclei, the bound enzyme is solubilized by DNase I treatment, thus suggesting binding to chromatin. Treatment with ionic strength releases .apprx.70% of bound **PHGPx**, suggesting that electrostatic bonds are involved. Immunogold electron microscopy indicates the assocn. of **PHGPx** with chromatin structures in isolated nuclei. A possible interpretation of these data is a **PHGPx** protective role against DNA peroxidative damage. Furthermore, in agreement with kinetic and structural information, **PHGPx**-chromatin binding could suggest an hypothetical **thiol** oxidase activity toward specific **thiol**-bearing proteins which could substitute for GSH as alternative donor substrates. Such activity could give to the enzyme a new important function which is not only protective but also has a specific regulatory function in chromatin condensation.
ST **phospholipid hydroperoxide glutathione peroxidase** binding chromatin; **testis** nucleus **phospholipid hydroperoxide glutathione peroxidase**
IT Cell nucleus
Chromatin
Testis
(**phospholipid hydroperoxide glutathione peroxidase** in rat **testis** nuclei is bound to chromatin)
IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: BPR (Biological process); BSU (Biological study, unclassified); **BIOL (Biological study)**; PROC (Process)
(**phospholipid hydroperoxide glutathione**

peroxidase in rat **testis** nuclei is bound to chromatin)

IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: BPR (Biological process); BSU (Biological study, unclassified); **BIOL (Biological study)**; PROC (Process)
(**phospholipid hydroperoxide glutathione peroxidase** in rat **testis** nuclei is bound to chromatin)

RN 97089-70-8 HCAPLUS
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L87 ANSWER 12 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1996:410607 HCAPLUS
DN 125:52990
TI Assays, devices and kits for determining male fertility
IN Alvarez, Juan G.
PA Beth Israel Hospital Association, USA
SO PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61D019-00
ICS G01N033-573; G01N033-68; G01N033-92; G01N001-31; G01N033-58; C12Q001-28; C12Q001-32
CC 9-1 (Biochemical Methods)
Section cross-reference(s): 13, 14

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9613225	A2	19960509	WO 1995-US14083	19951031	<--
	WO 9613225	A3	19970109			
	W: AL, AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ					
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG					
	US 5895749	A	19990420	US 1994-332825	19941031	
	CA 2203828	AA	19960509	CA 1995-2203828	19951031	
	AU 9540182	A1	19960523	AU 1995-40182	19951031	
	EP 789538	A1	19970820	EP 1995-939003	19951031	
	R: CH, DE, FR, GB, IT, LI, SE					
	JP 11514204	T2	19991207	JP 1995-514826	19951031	
PRAI	US 1994-332825		19941031			
	US 1994-332826		19941031			
	WO 1995-US14083		19951031			

AB Assays, devices and kits for identifying sperm samples with high pregnancy potential (e.g., for use in an assisted reproductive technol.) or sperm samples with low pregnancy potential (e.g., for identifying potentially infertile males or for evaluating the effectiveness of a male contraception means) are disclosed. The invention pertains to easy-to-use devices that can rapidly recover motile sperm from semen and assays and kits that use the devices to identify high-pregnancy-potential sperm samples. Preferred tests for identifying sperm samples with high pregnancy potential are esp. lipid peroxidn. tests that measure an indicator of lipid peroxidn. or a change in an indicator.

ST male fertility detn sperm pregnancy potential; lipid peroxidn test sperm male fertility

IT Dyes
Immunoassay
Latex
Oxidative stress, biological
Peroxidation
Pregnancy
Semen
Sperm
(assays and app. and kits for detg. male fertility)
IT Lipids, analysis
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(assays and app. and kits for detg. male fertility)
IT Glycerides, analysis
Glycolipids
Phosphatidylglycerols
Phospholipids, analysis
Protamines
Proteins, analysis
Sulfolipids
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(assays and app. and kits for detg. male fertility)
IT Antibodies
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(assays and app. and kits for detg. male fertility)
IT Gamete and Germ cell
(intrafallopian transfer; assays and app. and kits for detg. male fertility)
IT Insemination, artificial
(intrauterine; assays and app. and kits for detg. male fertility)
IT Cell nucleus
Flagella
Mitochondria
(proteins; assays and app. and kits for detg. male fertility)
IT Sperm
(acrosome, proteins; assays and app. and kits for detg. male fertility)
IT Fertilization
(extracorporeal, assays and app. and kits for detg. male fertility)
IT Enzymes
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(glycolytic, assays and app. and kits for detg. male fertility)
IT Contraceptives
Fertility
(male, assays and app. and kits for detg. male fertility)
IT Fertility
(male, disorder, assays and app. and kits for detg. male fertility)
IT Fatty acids, analysis
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(satd., assays and app. and kits for detg. male fertility)
IT Fatty acids, analysis
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(unsatd., assays and app. and kits for detg. male fertility)
IT Tubulins
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(.alpha.-, assays and app. and kits for detg. male fertility)
IT 57-88-5, Cholesterol, analysis 6217-54-5, Docosahexaenoic acid 9001-15-4, Creatine kinase 9001-60-9, Lactate dehydrogenase 9013-66-5,

Glutathione peroxidase 9054-89-1, Superoxide dismutase 9068-57-9, Acrosin 88847-89-6
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(assays and app. and kits for detg. male fertility)
IT 7440-57-5, Gold, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(assays and app. and kits for detg. male fertility)

L87 ANSWER 13 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN **1995:217375** HCAPLUS
DN **122:4159**
TI Purification and characterization of **phospholipid hydroperoxide glutathione peroxidase** from rat **testis** mitochondrial membranes
AU **Roveri, Antonella**; Maiorino, Matilde; Nisii, Carla; **Ursini, Fulvio**
CS Department of Biological Chemistry, University of Padova, via Trieste 75, I-35121, Padova, Italy
SO Biochimica et Biophysica Acta (**1994**), 1208(2), 211-21
CODEN: BBACAQ; ISSN: 0006-3002
PB Elsevier
DT Journal
LA English
CC 7-2 (Enzymes)
AB The selenoenzyme **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) is highly expressed in rat **testis**, where it is under gonadotropin control. In this organ a relevant **PHGPx** activity is strongly linked to mitochondria of cells undergoing differentiation to **spermatozoa**. This prompted a study on the possible difference between the sol. and the mitochondrial enzyme and the nature of the binding. The mitochondrial **PHGPx** activity could be solubilized by **detergents** or by the combined action of mild **detergent** treatment and ionic strength, thus suggesting an electrostatic binding of the protein to the inner surfaces of the organelle. The same chromatog. purifn. procedures were applied to cytosolic and membrane bound **PHGPx**, without revealing any significant difference between the two forms. Moreover, the electrophoretic mobility, the reactivity to antibodies and the fragmentation patterns also suggested the identity of the two forms of **testis PHGPx**. Eventually, **testis** cytosolic and membrane bound **PHGPx** showed the same substrate specificity for both peroxidic and **thiol** substrates. On the other hand, a complex behavior on hydrophobic interaction chromatog., compatible with multiple forms of the enzyme, and with a different tertiary structure of the major peaks was obsd. for sol. and mitochondrial **PHGPx**. Accordingly, two-dimensional electrophoresis followed by immunostaining with monoclonal antibodies, showed the presence of multiple isoforms with a different pattern between the sol. and the mitochondrial enzyme. These differences are not accounted for by glycosylation or a different degree of phosphorylation of tyrosines. In both enzymes, indeed, no glycosylation was detected and no more than 10% of **PHGPx** mols. were shown to contain a phosphotyrosine residue.
ST **phospholipid hydroperoxide glutathione peroxidase** mitochondria **testis**
IT Mitochondria
Testis
(purifn. and characterization of **phospholipid hydroperoxide glutathione peroxidase** from rat **testis** mitochondrial membranes)
IT Cytoplasm
(cytosol, purifn. and characterization of **phospholipid hydroperoxide glutathione peroxidase** from

rat **testis** mitochondrial membranes)
IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); **BIOL (Biological study)**
(purifn. and characterization of **phospholipid hydroperoxide glutathione peroxidase** from rat **testis** mitochondrial membranes)
IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); **BIOL (Biological study)**
(purifn. and characterization of **phospholipid hydroperoxide glutathione peroxidase** from rat **testis** mitochondrial membranes)
RN 97089-70-8 HCAPLUS
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L87 ANSWER 14 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN **1995:54597** HCAPLUS
DN **122:100299**
TI Effect of .alpha.-lipoic acid on Se-dependent glutathione peroxidases
AU Maiorino, M.
CS Dep. Biol. Chem., Univ. Padova, Padua, I-35 121, Italy
SO Biol. Oxid. Antioxid. (**1994**), 69-75. Editor(s): Packer, Lester; Cadenas, Enrique. Publisher: Hippokrates, Stuttgart, Germany. CODEN: 60KQA6
DT Conference
LA English
CC 7-3 (Enzymes)
AB The relative reactivity of different **thiols** towards peroxyl radicals and their substrate specificity for glutathione peroxidase or **phospholipid hydroperoxide glutathione peroxidase** were reported. The effect of oxidized **thiols** on the peroxidases activities were also reported.
ST glutathione peroxidase lipoate
IT 1200-22-2, .alpha.-Lipoic acid 9013-66-5, Glutathione peroxidase
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(lipoic acid effect on Se-dependent glutathione peroxidases)

L87 ANSWER 15 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1995:23067 HCAPLUS
DN 122:127042
TI Enzymic and immunological measurements of soluble and membrane-bound **phospholipid-hydroperoxide glutathione peroxidase**
AU **Roveri, Antonella**; Maiorino, Matilde; **Ursini, Fulvio**
CS Dep. Biol. Chem., Univ. Padova, Padua, 35121, Italy
SO **Methods in Enzymology (1994), 233**(OXYGEN RADICALS IN BIOLOGICAL SYSTEMS, PT. C), **202**-12
CODEN: MENZAU; ISSN: 0076-6879
DT Journal
LA English
CC 7-1 (Enzymes)
AB Procedures are described for the anal. of **phospholipid-hydroperoxide glutathione peroxidase** and for the prodn. of antibodies against the enzyme.
ST **phospholipid hydroperoxide glutathione peroxidase** analysis antibody

IT Antibodies
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(enzymic and immunol. measurement of phospholipid-hydroperoxide glutathione peroxide)
IT **97089-70-8**
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); **BIOL (Biological study)**; OCCU (Occurrence)
(enzymic and immunol. measurement of phospholipid-hydroperoxide glutathione peroxide)
IT **97089-70-8**
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); **BIOL (Biological study)**; OCCU (Occurrence)
(enzymic and immunol. measurement of phospholipid-hydroperoxide glutathione peroxide)
RN 97089-70-8 HCAPLUS
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L87 ANSWER 16 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN **1994:479115** HCAPLUS
DN **121:79115**
TI **Distribution** of **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) in rat **testis** mitochondria
AU Godeas, Cristiana; Sandri, Gabriella; Panfili, Enrico
CS Department of Biochemistry, Biophysics and Macromolecular Chemistry, University of Trieste, via Giorgieri, 1, Trieste, 34127, Italy
SO Biochimica et Biophysica Acta (**1994**), 1191(1), 147-50
CODEN: BBACAQ; ISSN: 0006-3002
DT Journal
LA English
CC 13-1 (Mammalian Biochemistry)
Section cross-reference(s): 7
AB The distribution of **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) in isolated rat **testis** mitochondria was investigated, using a reverse sucrose d. gradient centrifugation procedure for the sepn. of the inner and outer membranes and the contact sites between the two membranes. The results indicate that **PHGPx** is largely localized in the contact sites fraction. This finding might therefore suggest that the enzyme has more than just an antioxidant function.
ST **testis** mitochondria **phospholipid hydroperoxide glutathione peroxidase**
IT Mitochondria
(**phospholipid hydroperoxide glutathione peroxidase** distribution between inner and outer membranes of, of **testis**)
IT **Testis, composition**
(**phospholipid hydroperoxide glutathione peroxidase** distribution between mitochondria inner and outer membranes of)
IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: **BIOL (Biological study)**
(distribution between mitochondria inner and outer membranes of, of **testis**)
IT **97089-70-8, Phospholipid hydroperoxide**

glutathione peroxidase
RL: **BIOL (Biological study)**
(distribution between mitochondria inner and outer membranes of, of **testis**)
RN 97089-70-8 HCAPLUS
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L87 ANSWER 17 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN **1992:211561** HCAPLUS
DN **116:211561**
TI **Phospholipid hydroperoxide glutathione peroxidase** of rat **testis**. Gonadotropin dependence and immunocytochemical **identification**
AU **Roveri, Antonella**; Casasco, Andrea; Maiorino, Matilde; Dalan, Paolo; Calligaro, Alberto; **Ursini, Fulvio**
CS Dep. Biol. Chem., Univ. Padova, Padua, Italy
SO Journal of Biological Chemistry (**1992**), 267(9), 6142-6
CODEN: JBCHA3; ISSN: 0021-9258
DT Journal
LA English
CC 13-1 (Mammalian Biochemistry)
Section cross-reference(s): 2
AB A high glutathione peroxidase activity toward phospholipid hydroperoxides is present in rat **testis**. The attribution of this activity to the selenoenzyme **phospholipid hydroperoxide glutathione peroxidase** (**PHGPX**) was supported by cross-reactivity with antibodies raised against pig heart **PHGPX** which had been purified and characterized. Rat **testis** **PHGPX** is partially cytosolic and partially linked to nuclei and mitochondria. The sol. and organelle-bound enzymes appear identical by Western blot anal. **PHGPX**, but neither Se-dependent nor non-Se-dependent glutathione peroxidase activity, is expressed in **testes** only after puberty, disappears after hypophysectomy, and is partially restored by gonadotropin treatment. Specific immunostaining of **testes** by antiserum against **PHGPX** appears as a fine granular brown pattern localized throughout the cytoplasm in more immature cells but is confined to the peripheral part of the cytoplasm, the nuclear membrane, and mitochondria in maturing **spermatogenic** cells. As expected, immunostaining of **spermatogenic** cells in hypophysectomized animals was neg., but gonadotropin treatment only marginally increased the immunoreactivity. The expression of **PHGPX** in **testes** is consistent with the previously described specific requirement for Se for synthesis of a 15-20-kDa selenoprotein which is related to the prodn. of functional **spermatozoa**.
ST **phospholipid hydroperoxide glutathione peroxidase testis**; gonadotropin **phospholipid hydroperoxide glutathione peroxidase testis**
IT Cell nucleus
Mitochondria
(**phospholipid hydroperoxide glutathione peroxidase** assocn. with, of **testis**)
IT **Sperm**
Spermatogenesis
(**phospholipid hydroperoxide glutathione peroxidase** in, gonadotropin regulation of)
IT Pituitary hormones
RL: BIOL (Biological study)
(**phospholipid hydroperoxide glutathione**

peroxidase of **testis** regulation by)
IT Puberty
(**phospholipid hydroperoxide glutathione peroxidase** of **testis** regulation by gonadotropins in relation to)
IT **Testis, composition**
(**phospholipid hydroperoxide glutathione peroxidase** of, localization of, gonadotropins regulation in relation to)
IT Liver, composition
(**phospholipid hydroperoxide glutathione peroxidase** of, **testis** in relation to)
IT Cytoplasm
(cytosol, **phospholipid hydroperoxide glutathione peroxidase** of, of **testis**)
IT Gonadotropins
RL: BIOL (Biological study)
(pituitary, **phospholipid hydroperoxide glutathione peroxidase** of **testis** regulation by)
IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: PROC (Process)
(of **testis**, localization of, gonadotropins in relation to)
IT 9002-61-3, Chorionic gonadotropin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**phospholipid hydroperoxide glutathione peroxidase** of **testis** response to)
IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: PROC (Process)
(of **testis**, localization of, gonadotropins in relation to)
RN 97089-70-8 HCAPLUS
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L87 ANSWER 18 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1991:180927 HCAPLUS
DN 114:180927
TI **Phospholipid hydroperoxide glutathione peroxidase**
AU **Maiorino, Matilde**; Gregolin, Carlo; **Ursini, Fulvio**
CS Dep. Biol. Chem., Univ. Padova, Padua, 35121, Italy
SO **Methods in Enzymology (1990), 186**(Oxygen Radicals Biol. Syst., Pt. B), **448**-57
CODEN: MENZAU; ISSN: 0076-6879
DT Journal
LA English
CC 7-2 (Enzymes)
AB **Phospholipid hydroperoxide glutathione peroxidase** (PGHPX) of cytosol was purified and characterized. Kinetic mechanisms, Se content, function in protection of membranes against oxidative damage, and enzyme detn. in mammalian tissues are included.
ST **phospholipid hydroperoxide glutathione peroxidase**; mammal **phospholipid hydroperoxide glutathione peroxidase**; cytosol **phospholipid hydroperoxide glutathione peroxidase**
IT Organ
(phospholipid hydroperroxide glutathione peroxidase of, of mammals,

detn. and purifn. and properties of)
IT **97089-70-8P, Phospholipid hydroperoxide glutathione peroxidase**
RL: PREP (Preparation)
(of mammalian tissue cytosol, detn. and purifn. and characterization of)
IT **97089-70-8P, Phospholipid hydroperoxide glutathione peroxidase**
RL: PREP (Preparation)
(of mammalian tissue cytosol, detn. and purifn. and characterization of)
RN 97089-70-8 HCAPLUS
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L87 ANSWER 19 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN **1987:630619** HCAPLUS
DN **107:230619**
TI The role of selenium peroxidases in the protection against oxidative damage of membranes
AU **Ursini, Fulvio**; Bindoli, Alberto
CS Inst. Biol. Chem., Univ. Padova, Padua, Italy
SO Chemistry and Physics of Lipids (**1987**), 44(2-4), 255-76
CODEN: CPLIA4; ISSN: 0009-3084
DT Journal; General Review
LA English
CC 4-0 (Toxicology)
Section cross-reference(s): 1
AB A review with 115 refs. which deals with the chem. properties of Se in relation to its antioxidant properties and its reactivity in biol. systems. The interaction selenite with **thiols** and glutathione and the reactivity of selenocompds. with hydroperoxides are described. After a short survey on the distribution, metab. and organification of Se, the role of this element as a component of the 2 seleno-dependent glutathione peroxidases is described. The main features of glutathione peroxidase and **phospholipid hydroperoxide glutathione peroxidase** are also reviewed.
ST selenium antioxidant peroxidase review
IT Cell membrane
(damage to, selenium antioxidant properties and peroxidases in relation to)
IT 7782-49-2, Selenium, biological studies
RL: BIOL (Biological study)
(antioxidant properties of, cell membrane damage and peroxidases in relation to)
IT 9013-66-5, Glutathione peroxidase
RL: BIOL (Biological study)
(selenium antioxidant properties and cell membrane damage in relation to)

L87 ANSWER 20 OF 20 HCAPLUS COPYRIGHT 2003 ACS on STN
AN **1987:63476** HCAPLUS
DN **106:63476**
TI Different effects of Triton X-100, deoxycholate, and fatty acids on the kinetics of glutathione peroxidase and **phospholipid hydroperoxide glutathione peroxidase**
AU Maiorino, Matilde; **Roveri, Antonella**; Gregolin, Carlo; **Ursini, Fulvio**
CS Inst. Biol. Chem., Univ. Padova, Padua, 35131, Italy
SO Archives of Biochemistry and Biophysics (**1986**), 251(2), 600-5
CODEN: ABBIA4; ISSN: 0003-9861

DT Journal
LA English
CC 7-3 (Enzymes)
AB The effects of Triton X 100, deoxycholate, and fatty acids were studied on the 2 steps of the ping-pong reaction catalyzed by Se-dependent glutathione peroxidases. The study was carried out by analyzing the single progression curves where the specific glutathione oxidn. was monitored by using glutathione reductase and NADPH. Although the classical glutathion peroxidase was inhibited only by Triton, the newly discovered **phospholipid hydroperoxide glutathione peroxidase** (from pig heart) was inhibited by deoxycholate and by unsatd. fatty acids. The kinetic anal. showed that in the case of glutathione peroxidase only the interaction of the lipophilic peroxidic substrate was hampered by Triton, indicating that the enzyme is not active at the interface. **Phospholipid hydroperoxide glutathione peroxidase** activity measured with linoleic acid hydroperoxide as substrate on the other hand, was not stimulated by Triton concns. which were shown to stimulate the activity with phospholipid hydroperoxides. Furthermore a slight inhibition was apparent at high Triton concns., and the effect could be attributed to a surface diln. of the substrate. Deoxycholate and unsatd. fatty acids were not inhibitory to glutathione peroxidase but inhibited both steps of the peroxidic reaction of **phospholipid hydroperoxide glutathion-peroxidase**, in the presence of either amphiphilic or hydrophilic substrates. This inhibition pattern suggests an interaction of anionic **detergents** with the active site of this enzyme. These results are in agreement with the different roles played by these peroxidases in the control of lipid peroxide concns. in the cells. Whereas glutathione peroxidase reduces the peroxides in the water phase (mainly H2O2), the new peroxidase reduces the amphiphilic peroxides, possibly at the water-lipid interface.
ST glutathione peroxidase surfactant fatty acid; **phospholipid hydroperoxide glutathione peroxidase** surfactant
IT Kinetics, enzymic
(of inhibition, of glutathione peroxidase and **phospholipid hydroperoxide glutathione peroxidase**, by fatty acids and surfactants)
IT Enzyme functional sites
(of **phospholipid hydroperoxide glutathione peroxidase**, surfactants interaction with)
IT Surfactants
(anionic, **phospholipid hydroperoxide glutathione peroxidase** inhibition by, interaction with active site in relation to)
IT Fatty acids, biological studies
RL: BIOL (Biological study)
(unsatd., **phospholipid hydroperoxide glutathione peroxidase** inhibition by, kinetics of)
IT 9013-66-5, Glutathione peroxidase
RL: BIOL (Biological study)
(Triton X-100 inhibition of, kinetics of)
IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: **BIOL (Biological study)**
(deoxycholate and fatty acids and Triton X-100 inhibition by, kinetics of, interactions with active site in relation to)
IT 9002-93-1, Triton X-100
RL: BIOL (Biological study)
(glutathione peroxidase and **phospholipid hydroperoxide glutathione peroxidase** inhibition by, kinetics of)
IT 83-44-3, Deoxycholic acid

RL: BIOL (Biological study)
(**phospholipid hydroperoxide glutathione peroxidase** inhibition by, kinetics of)
IT 112-80-1, Oleic acid, biological studies
RL: BIOL (Biological study)
(**phospholipid hydroperoxide glutathione peroxidase** inhibition by, kinetics of, Triton X-100 effect on)
IT 25657-09-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with glutathione peroxidase and **phospholipid hydroperoxide glutathion peroxidase**, kinetics of, inhibitors effect on)
IT **97089-70-8, Phospholipid hydroperoxide glutathione peroxidase**
RL: **BIOL (Biological study)**
(deoxycholate and fatty acids and Triton X-100 inhibition by, kinetics of, interactions with active site in relation to)
RN 97089-70-8 HCAPLUS
CN Peroxidase, glutathione (phospholipid hydroperoxide-reducing) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

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FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 6 August 2003 (20030806/ED)

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L117 ANSWER 1 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN **1999:478880** BIOSIS
DN **PREV199900478880**
TI Dual function of the selenoprotein **PHGPx** during **sperm** maturation.
AU **Ursini, Fulvio**; Heim, Sabina; Kiess, Michael; Maiorino, Matilde; **Roveri, Antonella**; Wissing, Josef; **Flohe, Leopold (1)**
CS (1) Department of Biochemistry, Technical University of Braunschweig, Mascheroder Weg 1, D-38124, Braunschweig Germany
SO Science (Washington D C), (**Aug. 27, 1999**) Vol. 285, No. 5432, pp. 1393-1396.
ISSN: 0036-8075.
DT Article
LA English
SL English
AB The selenoprotein **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) changes its physical characteristics and biological functions during **sperm** maturation. **PHGPx** exists as a soluble peroxidase in **spermatids** but persists in mature **spermatozoa** as an enzymatically inactive, oxidatively cross-linked, insoluble protein. In the midpiece of mature **spermatozoa**, **PHGPx** protein represents at least 50 percent of the capsule material that embeds the helix of mitochondria. The role of **PHGPx** as a structural protein may explain the mechanical instability of the mitochondrial midpiece that is observed in selenium deficiency.

CC **Reproductive System - General; Methods *16501**
Biochemical Studies - General *10060
Developmental Biology - Embryology - Morphogenesis, General *25508
BC Mammalia - Unspecified 85700
IT Major Concepts
Development; Reproductive System (Reproduction)
IT Parts, Structures, & Systems of Organisms
sperm: maturation, reproductive system
IT Chemicals & Biochemicals
PHGPx: selenoprotein
ORGN Super Taxa
Mammalia: Vertebrata, Chordata, Animalia
ORGN Organism Name
mammal (Mammalia)
ORGN Organism Superterms
Animals; Chordates; Mammals; Nonhuman Mammals; Nonhuman Vertebrates; Vertebrates

L117 ANSWER 2 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN 1999:299151 BIOSIS
DN PREV199900299151
TI Role of **phospholipid hydroperoxide glutathione peroxidase** activity in protection against phospholipid damage in human **sperm**.
AU Hurst, R. (1); St. John, J.; Barratt, C. L. R.; Bao, Y.-P. (1); Williamson, G. (1)
CS (1) Department of Biochemistry, Norwich Laboratory, Institute of Food Research, Norwich Research Park, Colney, Norwich, NR4 7UA UK
SO FASEB Journal, (**April 23, 1999**) Vol. 13, No. 7, pp. A1365.
Meeting Info.: **Annual Meeting of the American Societies for Experimental Biology on Biochemistry and Molecular Biology 99** San Francisco, California, USA May 16-20, 1999 American Societies for Experimental Biology
. ISSN: 0892-6638.
DT **Conference**
LA English
CC Enzymes - General and Comparative Studies; Coenzymes *10802
Cytology and Cytochemistry - Human *02508
Biochemical Studies - General *10060
Metabolism - Energy and Respiratory Metabolism *13003
Reproductive System - General; Methods *16501
Biophysics - General Biophysical Studies *10502
General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals *00520
BC Hominidae 86215
IT Major Concepts
Bioenergetics (Biochemistry and Molecular Biophysics); Enzymology (Biochemistry and Molecular Biophysics); Reproductive System (Reproduction)
IT Parts, Structures, & Systems of Organisms
sperm: reproductive system
IT Diseases
male infertility: reproductive system disease/male
IT Chemicals & Biochemicals
phospholipid hydroperoxide glutathione peroxidase: antioxidant enzyme, selenium-dependent
IT Alternate Indexing
Infertility, Male (MeSH)
IT Miscellaneous Descriptors
fertility; oxidative destruction defense; phospholipid damage protection; **Meeting Abstract**
ORGN Super Taxa
Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
human (Hominidae)
ORGN Organism Superterms
Animals; Chordates; Humans; Mammals; Primates; Vertebrates
RN **97089-70-8 (PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE)**
7782-49-2 (SELENIUM)

L117 ANSWER 3 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN **1998:488093** BIOSIS
DN **PREV199800488093**
TI Testosterone mediates expression of the selenoprotein **PHGPx** by induction of **spermatogenesis** and not by direct transcriptional gene activation.
AU Maiorino, Matilde (1); Wissing, Josef B.; Brigelius-Flohe, Regina; Calabrese, Fiorella; **Roveri, Antonella**; Steinert, Peter; **Ursini, Fulvio**; **Flohe, Leopold**
CS (1) Dipartmento Chimica Biologica, Viale G. Colombo 3, I-35121 Padova Italy
SO FASEB Journal, (**Oct., 1998**) Vol. 12, No. 13, pp. 1359-1370. ISSN: 0892-6638.
DT Article
LA English
AB Selenium deficiency is known to be associated with male infertility, and the selenoprotein **PHGPx** has been shown to increase in rat **testis** after puberty and to depend on gonadotropin stimulation in hypophysectomized rats (Roveri et al. (1992) J. Biol. Chem. 267, 6142-6146). Exposure of decapsulated whole **testis**, however, faded to reveal any transcriptional activation or inhibition of the **PHGPx** gene by testosterone, human chorionic gonadotropin, or forskolin. Nevertheless, it was verified that the specific activity of **PHGPx** in **testis**, but not of cGPx, con-elated with sexual maturation. Leydig cell destruction in vivo by ethane dimethane sulfonate (EDS) resulted in a delayed decrease in **PHGPx** activity and mRNA that could be completely prevented by testosterone substitution. cGPx transiently increased upon EDS treatment, probably as a result of reactive macrophage augmentation. In situ mRNA hybridization studies demonstrated an uncharacteristic low level of cGPx transcription in **testis**, whereas **PHGPx** mRNA was abundantly and preferentially expressed in round **spermatids**. The data show that the age or gonadotropin-dependent expression of **PHGPx** in **testis** does not result from direct transcriptional gene activation by testosterone, but is due to differentiation stage-specific expression in late **spermatids**, which are under the control of Leydig cell-derived testosterone. The striking burst of **PHGPx** expression at the transition of round to elongated **spermatids** suggests an involvement of this selenoprotein in **sperm** maturation.
CC **Reproductive System - Physiology and Biochemistry *16504**
Biochemical Studies - Proteins, Peptides and Amino Acids *10064
Enzymes - Chemical and Physical *10806
Endocrine System - Gonads and Placenta *17006
Biochemical Studies - General *10060
Biochemical Studies - Nucleic Acids, Purines and Pyrimidines *10062
BC Muridae 86375
IT Major Concepts
Endocrine System (Chemical Coordination and Homeostasis); **Methods and Techniques**; Respiratory System (Respiration)
IT Chemicals & Biochemicals
ethane dimethane sulfonate; glutathione peroxidase: assay; mRNA [messenger RNA]; testosterone; **PHGPx**: selenoprotein
IT Methods & Equipment
in situ hybridization: labeling method, nucleic acid labeling;

spectrophotometry: analytical method, photometry: CB
IT Miscellaneous Descriptors
spermatogenesis
ORGN Super Taxa
Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
ORGN Organism Name
Wistar rat (Muridae): male
ORGN Organism Superterms
Animals; Chordates; Mammals; Nonhuman Mammals; Nonhuman Vertebrates; Rodents; Vertebrates
RN 58-22-0 (TESTOSTERONE)
9013-66-5 (GLUTATHIONE PEROXIDASE)
4672-49-5 (ETHANE DIMETHANE SULFONATE)

L117 ANSWER 4 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN **1998:57363** BIOSIS
DN **PREV199800057363**
TI **Phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**): More than an antioxidant enzyme.
AU **Ursini, Fulvio**; Maiorino, Matilde; **Roveri, Antonella**
CS Dep. Biol. Chem., Univ. Padova, Padova Italy
SO Biomedical and Environmental Sciences, (**Sept., 1997**) Vol. 10, No. 2-3, pp. 327-332.
Meeting Info.: **Sixth International Symposium on Selenium in Biology and Medicine** Beijing, China The Chinese Academy of Preventive Medicine
. ISSN: 0895-3988.
DT **Conference**
LA English
CC Enzymes - General and Comparative Studies; Coenzymes *10802
Biochemical Studies - General *10060
General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals *00520
IT Major Concepts
Enzymology (Biochemistry and Molecular Biophysics)
IT Chemicals & Biochemicals
glutathione peroxidase; **phospholipid hydroperoxide glutathione peroxidase** [**PHGPx**]: antioxidant enzyme; selenocysteine glutamine; tryptophan; vitamin E; 15-lipoxygenase
IT Miscellaneous Descriptors
Meeting Paper
RN **97089-70-8** (**PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE**)
9013-66-5 (GLUTATHIONE PEROXIDASE)
54-12-6Q (TRYPTOPHAN)
73-22-3Q (TRYPTOPHAN)
1406-18-4 (VITAMIN E)
82249-77-2 (15-LIPOXYGENASE)

L117 ANSWER 5 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN **1998:57349** BIOSIS
DN **PREV199800057349**
TI Product of the Schistosoma mansoni glutathione peroxidase gene is a selenium containing **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) sharing molecular weight and substrate specificity with its mammalian counterpart.
AU Maiorino, Matilde (1); Pierce, Raymond; **Flohe, Leopold**
CS (1) Dep. Biol. Chem., Via Trieste 75, I-35121 Padova Italy
SO Biomedical and Environmental Sciences, (**Sept., 1997**) Vol. 10, No. 2-3, pp. 209-213.
Meeting Info.: **Sixth International Symposium on Selenium in Biology and Medicine** Beijing, China The Chinese Academy of Preventive

Medicine
. ISSN: 0895-3988.
DT **Conference**
LA English
CC Enzymes - General and Comparative Studies; Coenzymes *10802
Genetics and Cytogenetics - General *03502
Biochemical Studies - General *10060
General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals *00520
BC Trematoda 45200
Bovidae 85715
Suidae 85740
IT Major Concepts
Enzymology (Biochemistry and Molecular Biophysics); Molecular Genetics (Biochemistry and Molecular Biophysics)
IT Chemicals & Biochemicals
glutathione peroxidase gene; **phospholipid hydroperoxide glutathione peroxidase** [**PHGPx**]: selenium containing; selenocysteine
IT Miscellaneous Descriptors
Meeting Paper
ORGN Super Taxa
Bovidae: Artiodactyla, Mammalia, Vertebrata, Chordata, Animalia; Suidae: Artiodactyla, Mammalia, Vertebrata, Chordata, Animalia; Trematoda
ORGN Organism Name
bovine (Bovidae); porcine (Suidae); Schistosoma-mansoni (Trematoda)
ORGN Organism Superterms
Animalia; Animals; Artiodactyls; Chordates; Helminthes; Invertebrata; Mammals; Nonhuman Mammals; Nonhuman Vertebrates; Trematoda: Platyhelminthes; Vertebrates
RN 9013-66-5 (GLUTATHIONE PEROXIDASE)
7782-49-2 (SELENIUM)
97089-70-8 (PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE)
3614-08-2 (SELENOCYSTEINE)

L117 ANSWER 6 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN **1997:87282** BIOSIS
DN **PREV199799378995**
TI **Phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) in rat **testis** nuclei is bound to chromatin.
AU Godeas, Cristiana; Tramer, Federica; Micali, Fulvio; **Roveri, Antonella**; Maiorino, Matilde; Nisii, Carla; Sandri, Gabriella; Panfili, Enrico (1)
CS (1) Dep. Biochem., Biophysics Macromolecular Chemistry, Univ. Trieste, Via Giorgieri, 1-34127 Trieste Italy
SO Biochemical and Molecular Medicine, (1996) Vol. 59, No. 2, pp. 118-124. ISSN: 1077-3150.
DT Article
LA English
AB In rat **testis** nuclei the activity of the selenoenzyme **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx, EC 1.11.1.12**) is much higher than in other tissues and subcellular compartments, with the sole exception of mitochondria. In nuclei, the bound enzyme is solubilized by DNase I treatment, thus suggesting a binding to chromatin. Treatment with ionic strength releases about 70% of bound **PHGPx**, suggesting that electrostatic bonds are involved. Immunogold electron microscopy indicates the association of **PHGPx** with chromatin structures in isolated nuclei. A possible interpretation of these data is a **PHGPx** protective role against

DNA peroxidative damage. Furthermore, in agreement with kinetic and structural information, **PHGPx**-chromatin binding could suggest an hypothetical thiol oxidase activity toward specific thiol bearing proteins which could substitute for GSH as alternative donor substrates. Such activity could give to the enzyme a new important function which is not only protective but also has a specific regulatory function in chromatin condensation.

CC Microscopy Techniques - Electron Microscopy *01058
Cytology and Cytochemistry - Animal *02506
Genetics and Cytogenetics - Animal *03506
Biochemical Studies - Nucleic Acids, Purines and Pyrimidines *10062
Biochemical Studies - Proteins, Peptides and Amino Acids *10064
Enzymes - Physiological Studies *10808
Anatomy and Histology, General and Comparative - Microscopic and Ultramicroscopic Anatomy *11108
Reproductive System - Physiology and Biochemistry *16504

BC Muridae *86375

IT Major Concepts
Biochemistry and Molecular Biophysics; Cell Biology; Enzymology (Biochemistry and Molecular Biophysics); Genetics; **Methods and Techniques**; Morphology; Reproductive System (Reproduction)

TT Chemicals & Biochemicals
PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE; EC 1.11.1.12

IT Miscellaneous Descriptors
ANALYTICAL METHOD; CHROMATIN; CONDENSATION; DNA; **EC 1.11.1.12**; IMMUNOGOLD ELECTRON MICROSCOPY; MOLECULAR GENETICS; NUCLEI; **PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE**; REPRODUCTIVE SYSTEM; **TESTIS**

ORGN Super Taxa
Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
rat (Muridae)

ORGN Organism Superterms
animals; chordates; mammals; nonhuman mammals; nonhuman vertebrates; rodents; vertebrates

RN **97089-70-8 (PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE)**
97089-70-8 (EC 1.11.1.12)

L117 ANSWER 7 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN **1996:378037** BIOSIS
DN **PREV199699100393**
TI Influence of selenium status on activity of **phospholipid hydroperoxide glutathione peroxidase** in rat liver and **testis** in comparison with other selenoproteins.
AU Cockell, Kevin A. (1); Brash, Alan R.; Burk, Raymond F.
CS (1) Nutrition Res. Div., Food Directore, Health Protection Branch, Health Canada, 2203C Sir F.G. Banting Research Centre, Tunney's Pasture, Ottawa, ON K1A 0L2 Canada
SO Journal of Nutritional Biochemistry, (1996) Vol. 7, No. 6, pp. 333-338. ISSN: 0955-2863.
DT Article
LA English
AB Selenium-deficient rats (-Se, fed a Torula yeast-based diet containing no added selenium for 6 weeks) were injected intraperitoneally with up to 50 mu-g selenium per kg bodyweight (BW) and sacrificed 6 or 12 hr later. Control rats were fed a similar diet with 0.25 mg Se/kg diet added as sodium selenate. **Phospholipid hydroperoxide glutathione peroxidase** (phGSH-Px) and cellular

glutathione peroxidase (cGSH-Px) activities were determined in liver and **testis**. Extracellular glutathione peroxidase (eGSH-Px) activity and selenoprotein P level were measured in plasma. Liver phGSH-Px activity in control rats was small in comparison with liver cGSH-Px activity. Much of the phGSH-Px activity measured in liver (especially under -Se conditions) was accounted for by non-specific NADPH oxidation, which was measurable in the absence of any added substrate in the reaction vial, or when a non-reactive substrate analogue was used. Gross activity of liver phGSH-Px fell only to 76% of control values in selenium deficiency and showed little response to selenium injection. Liver cGSH-Px and plasma eGSH-Px activities in -Se rats were reduced to lt 2% of control values under the same conditions, increasing after selenium injection only to 2 to 3% of control. Selenoprotein P level in plasma fell to 7% of control levels in -Se rats, returning to a maximum of 43% of control by 12 hr after injection of the highest selenium dose. In **testis**, phGSH-Px and cGSH-Px fell only to 65% and 45% of control values, respectively, and did not increase significantly in response to resupplementation of selenium under the conditions of this experiment. Based on activity levels, phGSH-Px appears to be of greater relevance in **testis** than liver. Activity of phGSH-Px in either tissue showed little change with selenium status. None of the peroxidases measured responded as strongly to short-term selenium repletion as did selenoprotein P.

CC Biochemical Methods - Proteins, Peptides and Amino Acids *10054
Biochemical Methods - Minerals *10059
Biochemical Studies - Proteins, Peptides and Amino Acids 10064
Biochemical Studies - Lipids 10066
Biochemical Studies - Minerals 10069
Biophysics - General Biophysical Techniques 10504
Enzymes - Physiological Studies *10808
Metabolism - Lipids *13006
Metabolism - Minerals *13010
Metabolism - Proteins, Peptides and Amino Acids *13012
Metabolism - Metabolic Disorders *13020
Nutrition - Minerals *13206
Digestive System - Physiology and Biochemistry *14004
Blood, Blood-Forming Organs and Body Fluids - Blood and Lymph Studies *15002

BC Muridae *86375

IT Major Concepts
Blood and Lymphatics (Transport and Circulation); Digestive System (Ingestion and Assimilation); Enzymology (Biochemistry and Molecular Biophysics); Metabolism; **Methods and Techniques**; Nutrition

IT Chemicals & Biochemicals
SELENIUM; **PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE**; GLUTATHIONE PEROXIDASE

IT Miscellaneous Descriptors
CELLULAR GLUTATHIONE PEROXIDASE; EXTRACELLULAR GLUTATHIONE PEROXIDASE; SELENOPROTEIN P

ORGN Super Taxa
Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
Muridae (Muridae)

ORGN Organism Superterms
animals; chordates; mammals; nonhuman vertebrates; nonhuman mammals; rodents; vertebrates

RN 7782-49-2 (SELENIUM)
97089-70-8 (PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE)
9013-66-5 (GLUTATHIONE PEROXIDASE)

L117 ANSWER 8 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN **1996:246261** BIOSIS

DN **PREV199698802390**
TI **Phospholipid hydroperoxide glutathione peroxidase**: More than an antioxidant enzyme.
AU Maiorino, Matilde (1); **Roveri, Antonella (1)**; Gregolin, Carlo (1); **Ursini, Fulvio**
CS (1) Univ. Padova, Padova Italy
SO Packer, L. [Editor]; Cadenas, E. [Editor]. Antioxidants in Health and Disease, (1995) Vol. 2, pp. 265-286. Antioxidants in Health and Disease; Biothiols in health and disease.
Publisher: Marcel Dekker, Inc. 270 Madison Avenue, New York, New York 10016, USA.
ISBN: 0-8247-9654-3.
DT Book
LA English
CC Biochemical Studies - Proteins, Peptides and Amino Acids 10064
Biochemical Studies - Minerals 10069
Enzymes - Physiological Studies 10808
Metabolism - Minerals *13010
Toxicology - General; Methods and Experimental *22501
Plant Physiology, Biochemistry and Biophysics - Enzymes *51518
Plant Physiology, Biochemistry and Biophysics - Metabolism *51519
Plant Physiology, Biochemistry and Biophysics - Chemical Constituents *51522
BC Plantae - Unspecified *11000
IT Major Concepts
Enzymology (Biochemistry and Molecular Biophysics); Metabolism; Toxicology
IT Chemicals & Biochemicals
PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE; SELENIUM; SELENOCYSTINE; SELENOHOMOCYSTINE; SELENOCYSTATHIONINE; SELENOMETHIONINE
IT Miscellaneous Descriptors
BOOK CHAPTER; METABOLISM; METHYLSELENOCYSTINE; SELENIUM; SELENOCYSTATHIONINE; SELENOCYSTINE; SELENOHOMOCYSTINE; SELENOMETHIONINE
ORGN Super Taxa
Plantae - Unspecified: Plantae
ORGN Organism Name
Plantae (Plantae - Unspecified)
ORGN Organism Superterms
plants
RN **97089-70-8 (PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE)**
7782-49-2 (SELENIUM)
1464-43-3Q (SELENOCYSTINE)
2897-21-4Q (SELENOCYSTINE)
29621-88-3Q (SELENOCYSTINE)
7776-33-2 (SELENOHOMOCYSTINE)
2196-58-9 (SELENOCYSTATHIONINE)
1464-42-2Q (SELENOMETHIONINE)
3211-76-5Q (SELENOMETHIONINE)

L117 ANSWER 9 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN **1995:27827** BIOSIS
DN **PREV199598042127**
TI Purification and characterization of **phospholipid hydroperoxide glutathione peroxidase** from rat **testis** mitochondrial membranes.
AU **Roveri, Antonella**; Maiorino, Matilde; Nisii, Carla; **Ursini, Fulvio (1)**
CS (1) Dep. Chem. Sci. Technol., Univ. Udine, Udine Italy
SO Biochimica et Biophysica Acta, (1994) Vol. 1208, No. 2, pp. 211-221.
ISSN: 0006-3002.
DT Article

LA English
AB The selenoenzyme **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) is highly expressed in rat **testis**, where it is under gonadotropin control. In this organ a relevant **PHGPx** activity is strongly linked to mitochondria of cells undergoing differentiation to **spermatozoa**. This prompted a study on the possible difference between the soluble and the mitochondrial enzyme and the nature of the binding. The mitochondrial **PHGPx** activity could be solubilized by detergents or by the combined action of mild detergent treatment and ionic strength, thus suggesting an electrostatic binding of the protein to the inner surfaces of the organelle. The same chromatographic purification procedures were applied to cytosolic and membrane bound **PHGPx**, without revealing any significant difference between the two forms. Moreover, the electrophoretic mobility, the reactivity to antibodies and the fragmentation patterns also suggested the identity of the two forms of **testis PHGPx**. Eventually, **testis** cytosolic and membrane bound **PHGPx** showed the same substrate specificity for both peroxidic and thiol substrates. On the other hand, a complex behaviour on hydrophobic interaction chromatography, compatible with multiple forms of the enzyme, and with a different tertiary structure of the major peaks was observed for soluble and mitochondrial **PHGPx** . Accordingly, two-dimensional electrophoresis followed by immunostaining with monoclonal antibodies, showed the presence of multiple isoforms with a different pattern between the soluble and the mitochondrial enzyme. These differences are not accounted for by glycosylation or a different degree of phosphorylation of tyrosines. In both enzymes, indeed, no glycosylation was detected and no more than 10% of **PHGPx** molecules were shown to contain a phosphotyrosine residue.
CC **Cytology and Cytochemistry - Animal *02506**
Biochemical Studies - General 10060
Biochemical Studies - Proteins, Peptides and Amino Acids *10064
Biochemical Studies - Minerals 10069
Biophysics - Molecular Properties and Macromolecules *10506
Biophysics - Membrane Phenomena *10508
Enzymes - Chemical and Physical *10806
Enzymes - Physiological Studies *10808
Metabolism - Lipids 13006
Reproductive System - Physiology and Biochemistry *16504
Endocrine System - Gonads and Placenta *17006
Developmental Biology - Embryology - Morphogenesis, General *25508
BC Muridae *86375
IT Major Concepts
Biochemistry and Molecular Biophysics; Cell Biology; Endocrine System (Chemical Coordination and Homeostasis); Enzymology (Biochemistry and Molecular Biophysics); Membranes (Cell Biology); Reproductive System (Reproduction)
IT Chemicals & Biochemicals
PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE; **EC 1.11.1.12**; PHOSPHOTYROSINE; SELENIUM
IT Miscellaneous Descriptors
CHROMATOGRAPHY; CYTOSOLIC ENZYME; **EC 1.11.1.12**; ELECTROPHORESIS; ELECTROSTATIC BINDING; ORGANELLE MEMBRANE BOUND ENZYME; PEPTIDE MAPPING; PHOSPHOTYROSINE; SELENIUM; SELENOENZYME; SOLUBLE PROTEIN; **SPERMATOGENESIS**; STRUCTURE-ACTIVITY RELATIONSHIP; SUBSTRATE SPECIFICITY
ORGN Super Taxa
Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
ORGN Organism Name
Muridae (Muridae)
ORGN Organism Superterms
animals; chordates; mammals; nonhuman vertebrates; nonhuman mammals;

rodents; vertebrates
RN **97089-70-8 (PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE)**
97089-70-8 (EC 1.11.1.12)
21820-51-9 (PHOSPHOTYROSINE)
7782-49-2 (SELENIUM)

L117 ANSWER 10 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN 1994:421809 BIOSIS
DN PREV199497434809
TI Comparison between soluble and membrane bound **phospholipid hydroperoxide glutathione peroxidase.**
AU Maiorino, Matilde (1); **Roveri, Antonella (1)**; **Ursini, Fulvio**
CS (1) Dep. Biol. Chem., Univ. Padova, I-35121 Padova Italy
SO Asada, K. [Editor]; Yoshikawa, T. [Editor]. **International Congress Series**, (1994) No. 1058, pp. 107-110. International **Congress** Series; Frontiers of reactive oxygen species in biology and medicine. Publisher: Elsevier Science Publishers B.V. PO Box 211, Sara Burgerhartstraat 25, 1000 AE Amsterdam, Netherlands.
Meeting Info.: **6th International Conference on Superoxide and Superoxide Dismutase** Kyoto, Japan October 11-15, 1993
ISSN: 0531-5131. ISBN: 0-444-81778-6.
DT Book; **Conference**
LA English
CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
Biochemical Studies - Nucleic Acids, Purines and Pyrimidines 10062
Biochemical Studies - Proteins, Peptides and Amino Acids *10064
Biochemical Studies - Lipids *10066
Biochemical Studies - Minerals 10069
Enzymes - Physiological Studies *10808
Reproductive System - Physiology and Biochemistry *16504
BC Muridae *86375
IT Major Concepts
Biochemistry and Molecular Biophysics; Enzymology (Biochemistry and Molecular Biophysics); Reproductive System (Reproduction)
IT Chemicals & Biochemicals
PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE; TYROSINE KINASE; SELENIUM
IT Miscellaneous Descriptors
BOOK CHAPTER; DNA; **MEETING PAPER**; SELENIUM; **TESTIS**; TYROSINE KINASE
ORGN Super Taxa
Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
ORGN Organism Name
rat (Muridae)
ORGN Organism Superterms
animals; chordates; mammals; nonhuman mammals; nonhuman vertebrates; rodents; vertebrates
RN **97089-70-8 (PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE)**
80449-02-1 (TYROSINE KINASE)
7782-49-2 (SELENIUM)

L117 ANSWER 11 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN **1994:415757** BIOSIS
DN **PREV199497428757**
TI Enzymatic and immunological measurements of soluble and membrane-bound **phospholipid-hydroperoxide glutathione peroxidase.**
AU **Roveri, Antonella (1)**; Maiorino, Matilde (1); **Ursini,**

Fulvio
CS (1) Dep. Biol. Chem., Univ. Padova, 35121 Padova Italy
SO Packer, L. [Editor]. Methods in Enzymology, (1994) Vol. 233, pp. 202-212. Methods in Enzymology; Oxygen radicals in biological systems, Part C. Publisher: Academic Press, Inc. 1250 Sixth Ave., San Diego, California 92101, USA.
ISSN: 0076-6879. ISBN: 0-12-182134-X.
DT Book
LA English
CC Biochemical Studies - Proteins, Peptides and Amino Acids *10064
Biophysics - Molecular Properties and Macromolecules *10506
Biophysics - Membrane Phenomena *10508
Enzymes - Methods *10804
Enzymes - Physiological Studies *10808
Immunology and Immunochemistry - General; Methods *34502
IT Major Concepts
Biochemistry and Molecular Biophysics; Enzymology (Biochemistry and Molecular Biophysics); Immune System (Chemical Coordination and Homeostasis); Membranes (Cell Biology)
IT Chemicals & Biochemicals
PHOSPHOLIPID-HYDROPEROXIDE GLUTATHIONE PEROXIDASE
IT Miscellaneous Descriptors
ANTIBODY PRODUCTION; ASSAY PROCEDURE; BOOK CHAPTER; METHOD; STANDARD ENZYME; WESTERN BLOT
RN **97089-70-8 (PHOSPHOLIPID-HYDROPEROXIDE GLUTATHIONE PEROXIDASE)**

L117 ANSWER 12 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN 1994:405397 BIOSIS
DN PREV199497418397
TI Cloning and sequencing of the cDNA encoding a human **testis phospholipid hydroperoxide glutathione peroxidase.**
AU Esworthy, R. Steven (1); Doan, Khiem; Doroshow, James H.; Chu, Fong-Fong
CS (1) Dep. Med. Oncol. Ther. Res., City Hope Natl. Med. Cent., 1500 E. Duarte Road, Duarte, CA 91010 USA
SO Gene (Amsterdam), (1994) Vol. 144, No. 2, pp. 317-318.
ISSN: 0378-1119.
DT **Conference**
LA English
AB A human cDNA that encodes a polypeptide that has 94% deduced amino-acid sequence identity to porcine **phospholipid hydroperoxide glutathione peroxidase** was cloned from a **testis** library. The sequence shows preservation of the UGA selenocysteine codon, putative active-site Trp and Glu residues and a Tyr residue that is phosphorylated in the porcine protein. The 3'-UTR shows some conservation of sequences implicated in the insertion of selenocysteine at an opal codon in human glutathione peroxidase-1.
CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
Genetics and Cytogenetics - Human *03508
Biochemical Studies - Nucleic Acids, Purines and Pyrimidines *10062
Biochemical Studies - Proteins, Peptides and Amino Acids *10064
Replication, Transcription, Translation *10300
Enzymes - Physiological Studies *10808
Reproductive System - Physiology and Biochemistry *16504
BC Hominidae *86215
IT Major Concepts
Biochemistry and Molecular Biophysics; Enzymology (Biochemistry and Molecular Biophysics); Genetics; Molecular Genetics (Biochemistry and Molecular Biophysics); Reproductive System (Reproduction)
IT Chemicals & Biochemicals

PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE; GENBANK-X71973
IT Sequence Data
amino acid sequence; molecular sequence data; nucleotide sequence; EMBL-X71973; GENBANK-X71973
IT Miscellaneous Descriptors
COMPLEMENTARY DNA; **MEETING ABSTRACT**
ORGN Super Taxa
Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia
ORGN Organism Name
Hominidae (Hominidae)
ORGN Organism Superterms
animals; chordates; humans; mammals; primates; vertebrates
RN **97089-70-8 (PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE)**
150354-87-3 (GENBANK-X71973)

L117 ANSWER 13 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN 1994:247010 BIOSIS
DN PREV199497260010
TI Selenium toxicity in stable **selenoperoxidase**-transfected mod cells.
AU Evenson, Jacque; Lei, Xingen; Patrick, Derrick; Wen, Wu; Moran, Tom; Sunde, Roger A.
CS Nutr. Sci. Group, Univ. Missouri, Columbia, MO 65211 USA
SO FASEB Journal, (1994) Vol. 8, No. 4-5, pp. A435.
Meeting Info.: Experimental Biology 94, Parts I and II Anaheim, California, USA April 24-28, 1994
ISSN: 0892-6638.
DT **Conference**
LA English
CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
Cytology and Cytochemistry - Animal *02506
Genetics and Cytogenetics - Animal *03506
Biochemical Methods - Minerals *10059
Biochemical Studies - Proteins, Peptides and Amino Acids *10064
Biochemical Studies - Minerals 10069
Enzymes - Physiological Studies *10808
Metabolism - Minerals *13010
Reproductive System - Anatomy *16502
Reproductive System - Pathology *16506
Toxicology - General; Methods and Experimental *22501
Neoplasms and Neoplastic Agents - Neoplastic Cell Lines *24005
Neoplasms and Neoplastic Agents - Biochemistry *24006
Tissue Culture, Apparatus, Methods and Media *32500
BC Muridae *86375
IT Major Concepts
Biochemistry and Molecular Biophysics; Cell Biology; Enzymology (Biochemistry and Molecular Biophysics); Genetics; Metabolism; **Methods and Techniques**; Reproductive System (Reproduction); Toxicology; Tumor Biology
IT Chemicals & Biochemicals
SELENIUM
IT Miscellaneous Descriptors
MEETING ABSTRACT; MOUSE MAMMARY ADENOCARCINOMA MOD CELLS
ORGN Super Taxa
Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
ORGN Organism Name
Muridae (Muridae)
ORGN Organism Superterms
animals; chordates; mammals; nonhuman vertebrates; nonhuman mammals; rodents; vertebrates

RN 7782-49-2 (SELENIUM)

L117 ANSWER 14 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN **1993:44428** BIOSIS
DN **PREV199344021278**
TI **Phospholipid hydroperoxide glutathione peroxidase**: A peculiar member of a growing family of mammalian selenoproteins.
AU Brigelius-Flohe, R. (1); Aumann, K. D.; Gross, G.; Schuckelt, R.; **Ursini, F.; Flohe, L.**
CS (1) Med. Hochschule Hannover, Molekularpharmakol., Konstanty Gutschow Str. 6, D-3000 Hannover Germany
SO Biological Chemistry Hoppe-Seyler, (1992) Vol. 373, No. 9, pp. 758-759. Meeting Info.: **Autumn Meeting of the Gesellschaft fuer Biologische Chemie (German Society for Biological Chemistry), Rostock, Germany, September 24-26, 1992. BIOL CHEM HOPPE-SEYLER**
ISSN: 0177-3593.
DT **Conference**
LA English
CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
Comparative Biochemistry, General 10010
Biochemical Studies - Proteins, Peptides and Amino Acids 10064
Biochemical Studies - Minerals 10069
Biophysics - Molecular Properties and Macromolecules 10506
Enzymes - General and Comparative Studies; Coenzymes *10802
Enzymes - Chemical and Physical *10806
Enzymes - Physiological Studies *10808
IT Major Concepts
Enzymology (Biochemistry and Molecular Biophysics)
IT Chemicals & Biochemicals
PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE; EC 1.11.1.9
IT Sequence Data
amino acid sequence; molecular sequence data
IT Miscellaneous Descriptors
ABSTRACT; ANALYTICAL METHOD; EC 1.11.1.9
RN **97089-70-8 (PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE)**
9013-66-5 (EC 1.11.1.9)

L117 ANSWER 15 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN 1992:422824 BIOSIS
DN BR43:66974
TI **PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE** FROM THE INHIBITION OF LIPID PEROXIDATION TO THE CONTROL OF CELLULAR FUNCTIONS?.
AU **URSINI F**; MAIORINO M; **ROVERI A**; BRIGELIUS-FLOHE R; SCHUCKELT R; WOLF B; **FLOHE L**
CS IST. CHIMICA, UNIV. UDINE, ITALY.
SO DAVIES, K. J. A. (ED.). OXIDATIVE DAMAGE AND REPAIR: CHEMICAL, BIOLOGICAL AND MEDICAL ASPECTS; 5TH BIENNIAL **MEETING** OF THE INTERNATIONAL SOCIETY FOR FREE RADICAL RESEARCH, PASADENA, CALIFORNIA, USA, NOVEMBER 14-20, 1990. XXVIII+899P. PERGAMON PRESS: OXFORD, ENGLAND, UK; ELMSFORD, NEW YORK, USA. ILLUS. (1991) 0 (0), 612-618.
ISBN: 0-08-041749-3.
DT **Conference**
FS BR; OLD
LA English
CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
Cytology and Cytochemistry - Animal *02506
Biochemical Studies - Proteins, Peptides and Amino Acids 10064

Biochemical Studies - Lipids 10066
Biochemical Studies - Minerals 10069
Enzymes - Chemical and Physical *10806
Enzymes - Physiological Studies *10808
Nutrition - Malnutrition; Obesity *13203
Nutrition - Minerals *13206
Reproductive System - Physiology and Biochemistry 16504
Endocrine System - Gonads and Placenta 17006
BC Animalia - Unspecified 33000
IT Miscellaneous Descriptors
SELENIUM DEFICIENCY **TESTES** GONADOTROPIN EFFECT FREE RADICALS
RN 7782-49-2 (SELENIUM)
97089-70-8 (PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE)

L117 ANSWER 16 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN **1992:263490** BIOSIS
DN **BA93:139815**
TI **PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE** OF RAT **TESTIS** GONADOTROPIN DEPENDENCE AND IMMUNOCYTOCHEMICAL IDENTIFICATION.
AU **ROVERI A**; CASASCO A; MAIORINO M; DALAN P; CALLIGARO A; **URSINI F**
CS DEP. BIOLOGICAL CHEMISTRY, UNIVERSITY PADOVA, ITALY.
SO J BIOL CHEM, (1992) 267 (9), 6142-6146.
CODEN: JBCHA3. ISSN: 0021-9258.
FS BA; OLD
LA English
AB A high glutathione peroxidase activity toward phospholipid hydroperoxides is present in rat **testis**. The attribution of this activity to the selenoenzyme **phospholipid hydroperoxide glutathione peroxidase** (**PHGPX**) was supported by cross-reactivity with antibodies raised against pig heart **PHGPX** which had been purified and characterized. Rat **testis** **PHGPX** is partially cytosolic and partially linked to nuclei and mitochondria. The soluble and organelle-bound enzymes appear identical by Western blot analysis. **PHGPX**, but neither selenium-dependent nor nonselenium-dependent glutathione peroxidase activity, is expressed in **testes** only after puberty, disappears after hypophysectomy, and is partially restored by gonadotropin treatment. Specific immunostaining of **testes** by antiserum against **PHGPX** appears as a fine granular brown pattern localized throughout the cytoplasm in more immature cells but is confined to the peripheral part of the cytoplasm, the nuclear membrane, and mitochondria in maturing **spermatogenic** cells. As expected, immunostaining of **spermatogenic** cells in hypophysectomized animals was negative, but gonadotropin treatment only marginally increased the immunoreactivity. The expression of **PHGPX** in **testes** is consistent with the previously described specific requirement for selenium for synthesis of a 15-20-kDa selenoprotein which is related to the production of functional **spermatozoa**.
CC **Cytology and Cytochemistry - Animal *02506**
Biochemical Studies - Proteins, Peptides and Amino Acids 10064
Biochemical Studies - Minerals 10069
Enzymes - Physiological Studies *10808
Metabolism - Minerals *13010
Nutrition - Minerals *13206
Reproductive System - Physiology and Biochemistry *16504
Endocrine System - Gonads and Placenta *17006
Immunology and Immunochemistry - General; Methods 34502
BC Muridae 86375
IT Miscellaneous Descriptors
SELENOPROTEIN DIETARY SELENIUM **SPERMATOGENESIS**
RN 7782-49-2 (SELENIUM)

97089-70-8 (PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE)

L117 ANSWER 17 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN 1991:107021 BIOSIS
DN BR40:49841
TI **PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE** FROM THE INHIBITION OF LIPID PEROXIDATION TO THE CONTROL OF CELLULAR FUNCTIONS?.
AU **URSINI F**
CS DEP. BIOL. CHEM., UNIV. PADOVA, ITALY.
SO **MEETING** ON OXIDATIVE DAMAGE AND REPAIR HELD AT THE 5TH BIENNIAL **MEETING** OF THE INTERNATIONAL SOCIETY FOR FREE RADICAL RESEARCH, PASADENA, CALIFORNIA, USA, NOVEMBER 14-20, 1990. FREE RADICAL BIOL MED. (1990) 9 (SUPPL 1), 127.
CODEN: FRBMEH. ISSN: 0891-5849.
DT **Conference**
FS BR; OLD
LA English
CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
Cytology and Cytochemistry - Animal *02506
Biochemistry - Gases *10012
Biochemical Studies - Lipids *10066
Biochemical Studies - Sterols and Steroids 10067
Enzymes - Physiological Studies *10808
Reproductive System - Physiology and Biochemistry *16504
BC Muridae 86375
IT Miscellaneous Descriptors
ABSTRACT RAT **TESTIS** PHOSPHOLIPIDS CHOLESTEROL HYDROPEROXIDE
RN 55529-60-7 (CHOLESTEROL HYDROPEROXIDE)
97089-70-8 (PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE)

L117 ANSWER 18 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN **1986:223085** BIOSIS
DN **BA81:114385**
TI **PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE.**
AU **URSINI F**; MAIORINO M; GREGOLIN C
CS INST. BIOL. CHEM., UNIV. PADUA, 35131 PADUA, ITALY.
SO INT J TISSUE REACT, (1986) 8 (2), 99-104.
CODEN: IJTEDP. ISSN: 0250-0868.
FS BA; OLD
LA English
AB In acute inflammation the activated leukocytes generate cytotoxic oxygen free radicals. The role of these radical species in the cellular damage following an acute inflammatory reaction is well known. On the other hand the extent of the cellular damage must be dependent on both the rate of the free-radical generation and the scavenging capacity of the tissues. Among the enzymes acting in the inhibition of this damage, a key role seems to be played by the new selenoenzyme **phospholipid hydroperoxide glutathione peroxidase**. Indeed the reduction of membrane hydroperoxides constitutes a secondary line of defence against lipid peroxidation, preventing the decomposition of hydroperoxides leading to the formation of new radicals. This enzyme inhibits lipid peroxidation and is as active as glutathione peroxidase on phospholipid hydroperoxides, on which no previously known peroxidase is active. Its protective activity for biomembranes, and the kinetic analysis in the presence of detergents, suggest its interfacial character. The inhibition of lipid peroxidation in the membranes apparently requires this enzyme, along with glutathione and vitamin E, in order to reduce the rate of the initiation reactions. This synergism bears out the role of this

enzyme in the multilevel defence system against free-radical damage in tissues.

CC **Cytology and Cytochemistry - Animal 02506**
Biophysics - Membrane Phenomena *10508
Enzymes - Physiological Studies *10808
Pathology, General and Miscellaneous - Inflammation and Inflammatory Disease *12508
Metabolism - Lipids *13006
Blood, Blood-Forming Organs and Body Fluids - Blood Cell Studies 15004
Blood, Blood-Forming Organs and Body Fluids - Lymphatic Tissue and Reticuloendothelial System 15008
Immunology and Immunochemistry Immunopathology, Tissue Immunology 34508

BC Muridae 86375

IT Miscellaneous Descriptors
RAT ACUTE INFLAMMATORY REACTION LIPID PEROXIDATION FREE-RADICAL TISSUE DAMAGE MULTILEVEL DEFENSE MECHANISM

RN **97089-70-8 (PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE)**

L117 ANSWER 19 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

AN **1985:360600** BIOSIS

DN **BA80:30592**

TI THE SELENOENZYME **PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE** EC-1.11.1.9.

AU **URSINI F**; MAIORINO M; GREGOLIN C

CS INSTITUTE OF BIOLOGICAL CHEMISTRY OF THE UNIVERSITY OF PADUA, VIA MARZOLO, 3, PADUA, ITALY.

SO BIOCHIM BIOPHYS ACTA, (1985) 839 (1), 62-70.
CODEN: BBACAQ. ISSN: 0006-3002.

FS BA; OLD

LA English

AB The reduction of membrane-bound hydroperoxides is a major factor acting against lipid peroxidation in living systems. This paper presents the characterization of the previously described peroxidation-inhibiting protein as a **phospholipid hydroperoxide glutathione peroxidase.** The enzyme is a monomer of 23 kDa (SDS[sodium dodecyl sulfate]-polyacrylamide gel electrophoresis). It contains 1 gatom Se/22,000 g protein. Se is in the selenol form, as indicated by the inactivation experiments in the presence of iodoacetate under reducing conditions. The glutathione peroxidase activity is essentially the same on different phospholipids enzymatically hydroperoxidized by the use of soybean lipoxidase (EC 1.13.11.12) in the presence of deoxycholate. The kinetic data are compatible with a tert-uni ping-pong mechanism, as in the case of the classical glutathione peroxidase (EC 1.11.1.9). The 2nd-order rate constants (K1) for the reaction of the enzyme with the hydroperoxide substrates indicate that, while H2O2 is reduced faster by the glutathione peroxidase, linoleic acid hydroperoxide is reduced faster by the present enzyme. The phospholipid hydroperoxides are reduced only by the latter. The dramatic stimulation exerted by Triton X-100 on the reduction of the phospholipid hydroperoxides suggests that this enzyme has an interfacial character. The similarity of amino acid composition, Se content and kinetic mechanism, relative to the difference in substrate specificity, indicates that the 2 enzymes classical glutathione peroxidase and **phospholipid hydroperoxide glutathione peroxidase** are in some way related. The latter is apparently specialized for lipophylic, interfacial substrates.

CC Mathematical Biology and Statistical Methods 04500
Biochemical Studies - Proteins, Peptides and Amino Acids 10064
Biochemical Studies - Lipids 10066
Biochemical Studies - Minerals 10069
Enzymes - Chemical and Physical *10806
Enzymes - Physiological Studies *10808

```
     Metabolism - Lipids  *13006
     Metabolism - Minerals  *13010
     Plant Physiology, Biochemistry and Biophysics - Enzymes  51518
IT   Miscellaneous Descriptors
        SOYBEAN PEROXIDASE EC-1.13.11.12 GLUTATHIONE PEROXIDASE EC-1.11.1.9
        KINETICS HYDROPEROXIDE SUBSTRATE PING-PONG MECHANISM
RN   9013-66-5 (GLUTATHIONE PEROXIDASE)
     9013-66-5 (EC-1.11.1.9)
     9029-60-1 (EC-1.13.11.12)


=> fil wpix
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    /BIX is also provided which comprises both /BI and /ABEX <<<

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 http://www.stn-international.de/training_center/patents/stn_guide.pdf <<<

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    GUIDES, PLEASE VISIT:
    http://www.derwent.com/userguides/dwpi_guide.html <<<

=>
=> d all abeq tech abex tot

L121 ANSWER 1 OF 6  WPIX  COPYRIGHT 2003 THOMSON DERWENT on STN
AN   2002-723318 [78]   WPIX
DNC  C2002-204807
TI   New nucleic acid encoding testis-specific selenoprotein, useful e.g. for
     detecting alternative exons, which is useful in screening for male
     mammalian infertility.
DC   B04 D16
IN   BEHNE, D; BORNKAMM, G; BRIELMEIER, M; CONRAD, M; KYRIAKOPOULOS, A;
     PFEIFER, H; SCHMIDT, J
PA   (GSFU-N) GSF FORSCHUNGSZENTRUM UMWELT & GESUNDHEI; (HAHN-N)
     HAHN-MEITNER-INST BERLIN GMBH
CYC  100
PI   WO 2002072626 A2 20020919 (200278)* DE   47p    C07K014-47
        RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ
            NL OA PT SD SE SL SZ TR TZ UG ZM ZW
         W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK
            DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR
            KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT
            RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM
            ZW
ADT  WO 2002072626 A2 WO 2002-EP1648 20020215
PRAI DE 2001-10107186 20010215
```

IC ICM C07K014-47
AB WO 200272626 A UPAB: 20021204
NOVELTY - A nucleic acid (I) that:
(i) encodes a selenoprotein (II) that is related to **phospholipid-hydroperoxide-glutathione peroxidase** (X); and
(ii) contains exons 2 - 7 of the (X)-gene with an alternative exon in the first intron of this gene, is new.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(1) alternative exons (AE) in the first exons of the (X)-gene having any of the sequences (S1 - S4) of 197, 251, 274 or 231 base pairs (bp), respectively, and given in the specification, or their fragments, encoding a biologically active peptide;
(2) primers for amplification of AE;
(3) mammalian (II) encoded by (I);
(4) a biologically active peptide (IIa), and its homologs or fragments, defined by the specified AE;
(5) an expression vector containing (I);
(6) host cells containing the vector of (5);
(7) a screening method for in vitro determination of mammalian fertility;
(8) an antibody (Ab) specific for (II) or (IIa);
(9) a hybridoma that produces a monoclonal Ab;
(10) a recombinant non-human animal in which AE has been inactivated; and
(11) producing (II), and derived peptides, by culturing cells of (6).
ACTIVITY - Antiinfertility. No biological data is given.
MECHANISM OF ACTION - Nuclear localization of (II) mediator. Protamine oxidizer; Sperm DNA oxidation protector.
USE - (I) is used for detecting alternative exons (AE), which is useful in screening for male mammalian infertility. (I) can also be used for recombinant expression of proteins or peptides, and as a hybridization probe. Proteins/peptides encoded by (I) are useful:
(i) for in vitro diagnosis, also in in vivo/in vitro treatment, of male infertility; and
(ii) to raise specific antibodies (Ab), useful as diagnostic or prognostic agents for detecting (II).
Animals, especially mice, in which AE has been inactivated, are useful as models for studying male infertility.
Dwg.0/7
FS CPI
FA AB; DCN
MC CPI: B04-E03E; B04-E03F; B04-E05; B04-E08; B04-F0100E; B04-F05; B04-G01; B04-G03; B04-G21; B04-L03B; B04-L03B0E; B04-N02B; B04-N02B0E; B04-P0100E; B11-C07A; B11-C08E2; B11-C08E3; B11-C08E5; B12-K04A; B12-K04F; B14-P02; D05-C03B; D05-C12; D05-H09; D05-H11; D05-H12A; D05-H12D1; D05-H12E; D05-H14; D05-H15; D05-H16A; D05-H17A3; D05-H17A6
TECH UPTX: 20021204
TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Nucleic Acid: (I) encodes a mammalian protein, especially of human, mouse, rat or pig origin, where the AE is respectively, (S1), (S2), (S3) or (S4). Preferably the primers for amplifying AE are P1 and P2. AE is the result of alternative splicing of the primary transcript from the (X)-gene, and is detected only in testis.
Preferred Protein: The N-terminal sequences of (II) are given in the specification and are 65 amino acids (aa) for human, 83 aa for mouse, 91 aa for rat, and 77 aa for pig.
Preparation: (I) is prepared by standard biochemical and molecular biology techniques. Monoclonal Ab are prepared by standard methods of immunization and cell fusion.
Preferred Process: In method (7):
(a) DNA is isolated from sperm;

(b) AE is amplified by a polymerase chain reaction;
(c) the amplicon is sequenced; and
(d) the sequence is compared with (S1).
If the sequences do not correspond, this indicates male infertility. Particularly the sperm are first tested for nuclear condensation.
gtcacagtcgcgcagtcctgactacgg (P1)
cctgctgaccgcgacacgcgcgaggta (P2)

ABEX UPTX: 20021204
ADMINISTRATION - (II) is preferably injected directly into the testis but may also be used in vitro, e.g. to treat sperm intended for in vitro fertilization.

EXAMPLE - A 34 kD selenoprotein was isolated from late rat spermatids. It reacted with antibodies against **phospholipid-hydroperoxide-glutathione peroxidase** (X) but its N-terminal sequence indicated a new protein, and a related sequence was detected in the mouse gene. Primers (sequences given in the specification) derived from known DNA and protein sequences were used to amplify the various alternative exons (AE).

L121 ANSWER 2 OF 6 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2002-479678 [51] WPIX
DNC C2002-136510
TI Recombinant multi-gene nucleic acid construct useful in plants to improve oxidative stress tolerance and enhance root development, has genes encoding gamma-glutamylcysteine synthetase and glutathione synthetase.
DC C06 D16
IN CREISSEN, G P; MULLINEAUX, P M
PA (PLAN-N) PLANT BIOSCIENCE LTD
CYC 97
PI WO 2002033105 A2 20020425 (200251)* EN 65p C12N015-82
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001094027 A 20020429 (200255) C12N015-82
ADT WO 2002033105 A2 WO 2001-GB4559 20011012; AU 2001094027 A AU 2001-94027 20011012
FDT AU 2001094027 A Based on WO 200233105
PRAI GB 2000-25312 20001016
IC ICM C12N015-82
AB WO 200233105 A UPAB: 20020812
NOVELTY - A stable recombinant multi-gene nucleic acid construct (I) comprising a gene encoding gamma -glutamylcysteine synthetase (gamma -ECS) (EC 6.3.2.2), and a gene encoding glutathione synthetase (GS) (EC 6.3.2.3), is new.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:
(1) a host cell (II) containing or transformed with (I);
(2) a transgenic plant (III) obtained by using (I), or which is a clone, selfed, hybrid progeny or other descendant of the transgenic plant, which in each case includes (II) and which express heterologous genes encoding gamma -ECS and GS, plus optionally one or more heterologous genes encoding enzymes (E) involved in the redox cycling of glutathione between its reduced and oxidized forms;
(3) a part of propagule from (III); and
(4) production (M1) of (I).
USE - (I) is useful for transforming a host cell, by introducing (I) into a plant host cell, and optionally causing or allowing recombination between the vector and the host cell genome. (I) is useful for producing a transgenic plant (e.g. tomato, pepper, aubergine, courgette, lettuce, cabbage, broccoli, ornamentals, potato or yam) with enhanced levels of

reduced glutathione, by introducing (I) into a host cell, regenerating a plant from the cell, and optionally, replicating the transgenic plant, where one or more of the promoters of the vector is an inducible promoter and applying an exogenous inducer of the inducible promoter. (M1) is useful for providing fruit with enhanced leaves of reduced glutathione and also for improving oxidative stress tolerance of a plant, enhancing root development of a plant, increasing post-harvest shelf life of a plant or fruit and delaying the bolting of a plant (all claimed). (I) is also useful for identifying transgenic plants of two crop species, e.g. tomato and lettuce, which express several genes associated with glutathione metabolism either in the chloroplast or in the cytosol.

ADVANTAGE - Using (I), a significant improvement in stress tolerance is achieved, and stable plant cell transformation is possible. The plants transformed with (I) have been found to have improved root weight and development compared to control plants, enabling improved water and nutrient uptake. The transformed plants have been found to have enhanced glutathione levels at the three ripening stages tested. This suggested that the plants and their fruits will have a longer shelf life.

DESCRIPTION OF DRAWING(S) - The figures show the plasmids pAFQ70.1 and pAFQ70.2.

13, 20/29

FS CPI

FA AB; GI; DCN

MC CPI: C04-A0800E; C04-A0900E; C04-E02E; C04-E08; C04-F0800E; C10-B02D; C12-K04F; C14-U01; D05-H12A; D05-H12E; D05-H14; D05-H16B; D05-H18B

TECH UPTX: 20020812

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preparation: (I) is prepared by standard recombinant techniques (claimed).

Preferred Construct: The gene encoding gamma-ECS is gsh1 gene and/or the gene encoding GS is gsh2 gene, operably linked to a different promoters to allow differential expression of gamma-ECS and GS. (I) comprises at least one gene operably linked to a promoter, and encodes (E). (E) is glutathione reductase (GOR) (e.g. plastidial glutathione reductase (GOR1) or cytosolic glutathione reductase (GOR2)), or glutathione peroxidase (GPX) (e.g. **phospholipid hydroperoxide glutathione peroxidase** (**phGPX**) or cytosolic glutathione peroxidase/glutathione-S-transferase (GST/GPX)). The gene encoding gamma-ECS is operably linked to a weaker promoter than the gene encoding glutathione synthetase. The promoter is inducible, and each one is present in the construct as no more than one copy and is heterologous to the gene with which it is operably linked. e.g. the gene encoding gamma-ECS is operably linked to a Ef1a promoter, the gene encoding GS is operably linked to a cauliflower mosaic virus (CaMV) 35S promoter, and the GOR gene, if present, is operably linked to AtrpL1 promoter, and the GPX gene, if present, is operably linked to a UBQ1 promoter. (I) is a plant binary vector comprising selectable genetic marker, e.g. firefly luciferase (luc) reporter gene and kanamycin resistance (kan; NPTII).

Preferred Plant: In (III), the heterologous genes are expressed in at least two subcellular compartments.

ABEX UPTX: 20020812

SPECIFIC VECTORS - (I) is pAFQ70.1 or pAFQ70.2 plasmid (claimed).

EXAMPLE - Genes encoding gamma-glutamylcysteine synthetase (GSHI) and glutathione synthetase (GSHII) were cloned from Escherichia coli B DNA. The gsh1 (1.65 kb) and gsh2 (1.15 kb) fragments were eluted from agarose gels and ligated into EcoRV digested, ddTTP-tailed pBluescript KSII+ to generate pGSH101 (gsh1) and pGSH201 (gsh2). For site directed mutagenesis (SDM), gshI and gshII genes were subcloned into pAlter using BamHI and SalI sites in pAlter and in pGSH101/pGSH201 to create pAlter/gshI and pAlter/gshII, respectively. The modified constructs containing the introduced SphI site at the AUG start codon (gcATGc) were called pGSH1-S and pGSHII-S. The modified gshI and gshII genes were subcloned into vector pJIT260 using the SphI and SalI sites in pJIT260 and pGSH1-S/pGSHII-S to create pGSH104 and pGSH205, respectively. A polymerase chain reaction

(PCR) product from pGSH104, consisting of the transit peptide and part of the GSHI coding sequence was obtained. The PCR fragment was cut with NcoI and EcoRI and cloned into pNondescript to create pNS-TP. Then SphI-SalI fragment from pGSH104 was inserted into same sites of pNS-TP, thus creating a TP-GSHI coding sequence with NcoI site at the ATG of the TP in plasmid pNS-TPGSHI. pGSH205 was cut with EcoRI and ClaI to remove sites at 3' end of the polylinker. The resulting plasmid was cut with BglII and religated, deleting 500 bp of CaMV polyA and leaving a unique XhoI site at 5' end of CaMV 35S promoter, creating pGSH205del. The plasmid was cut with XhoI, T4 polyI treated and a BamHI linker inserted, to create pGSH205del-Bam. pEF1alpha-1 63 was cut with BglII in CaMV polyA and the 35S:tpGSHII-polyA was inserted into this site as a BamHI-BglII fragment recovered from pGSH205del-Bam creating pPIGGSH205. The BglII site at the extreme end of CaMV polyA attached to the TPGSHII gene was cut, T4 polI treated and an ApaI linker (GGGCCC) inserted, thus introducing a unique ApaI site into the plasmid pPIGGSH205-Apa. The plasmid was digested with NcoI and SalI. The tp-GSHI coding sequence was recovered from pNS-TPGSHI as an NcoI-SalI fragment and inserted into the same sites in pPIGGSH205-Apa. Thus EF1alpha-tpGSHI-CaMVpolyA and 35S-tpSHII- CaMVpolyA were in tandem. This was called pGSH3. The EF1alpha-TpGSHI CaMV polyA and 35S-TPGSHII CaMV polyA genes were recovered as an SacI-ApaI fragment and inserted into the same sites of the binary Ti vector, pE6KL, creating pE6KL-GSH3. An 868bp EcoRI-SspI **PHGPX** coding sequence fragment was recovered from pGPX2. The plasmid contained a full length coding sequence for pea plastidial phospholipidhydroperoxide glutathione peroxidase (**PHGPX**). This was inserted into the BamHI-EcoRI sites of pUBQN-apx pA, creating pGPX4. A synthetic DNA fragment was made by annealing the oligonucleotides (i) and (ii), which would replace the order of restriction sites in the 5' end of the UBQ promoter. This was achieved by ligating the synthetic fragment into the Asp718 and SalI sites of pGPX4 and cutting with ApaI after ligation. This created pGPX4-Sac1. pGPX4-Sac1 was cut with XhoI and a SacI adaptor oligonucleotide (5'-TCGACGAGCTC-3') was ligated into the site, destroying the XhoI site and adding in a SacI site to create pGPX4-Sac2. The 1.85 kb UBQN-GPX-apxpA from pGPX4-Sac2 was inserted as a SacI fragment into the unique SacI site of pE6KLGSH3 and the orientation of the GPX gene selected to be driving transcription in the same direction as GSHI and GSHII. This plasmid was called pE6KLGSH3-GPX. Part of the polylinker was deleted from atrpL1-145-atrpL1 polya. Then the GOR1 cDNA was isolated as an EcoRV-BamHI fragment from pGR202 (containing the full length GR201 cDNA sequence). This fragment was ligated into the ClaI/T4 pol1 treated-BamHI sites of atrpL1D to create AtrpL1-Gor1-atrpL1 polyA. A PvuI site was introduced at the 3' end of the atrpL1 polyA to create atrpL-gor1-PvuI. This was digested with ApaI (in AtrpL1 promoter) and PvuI and the eluted ca. 2.4kb fragment was inserted into the unique Apa1/Puv1 sites in E6KLGSH3GPX. The missing 5' end of the AtrpL1 promoter was restored as a Apa1 fragment from AtrpL1-145-atrpL1 polyA into the unique Apa1 site in E6KLGSH3GPX, to create pAFQ70.1.
5'-ACCGTCGACGAGCTCGTACGGTATCGA-3' (i); and
5'-TCGATCGATACCGTACGAGCTCGTCGACG-3' (ii).

L121 ANSWER 3 OF 6 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2001-419936 [45] WPIX
DNC C2001-127155
TI New **phospholipid hydroperoxide glutathione peroxidase**, useful for manufacturing antioxidant cosmetic for preventing lipid and phospholipid modification due to peroxidation, leading to damage of skin cells, ageing or necrosis.
DC B04 D16
IN ESHDAT, Y; STROSBERG, A D
PA (VETI-N) VETIGEN
CYC 25
PI EP 1111055 A1 20010627 (200145)* EN 61p C12N015-53
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT

RO SE SI
ADT EP 1111055 A1 EP 1999-403079 19991208
PRAI EP 1999-403079 19991208
IC ICM C12N015-53
ICS A61K038-44; C12N009-08; C12N015-67; C12N015-74; C12N015-79; C12P021-02
AB EP 1111055 A UPAB: 20010813
NOVELTY - Isolated **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) and their analogues comprising an amino acid sequence which is at least 60% identical to a fully defined 167 amino acid sequence (I), provided that the sequence is not (I), are new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) isolated **PHGPx** polynucleotides comprising a sequence, which is at least 45% identical or similar to a fully defined 862-bp sequence encoding the Cit-SAP sequence having 167 amino acids, provided that the polynucleotide is not the given 862-bp sequence, and their complements;

(2) engineering a plant **PHGPx** containing a selenocysteine instead of a cysteine at its active site, in a prokaryotic cell by introducing an appropriate stem-loop (SECIS) in a gene coding for a plant **PHGPx** is performed by site-specific mutagenesis comprising:

(a) amplifying the sequence containing the gene coding for a plant **PHGPx** in 2 fragments:

(i) one fragment amplified by 2 primers, one chosen from the sequence coding the gene containing the anticodon corresponding to the catalytic residue (Cys or Sec), and one located in the plasmid carrying the gene; and

(ii) one fragment amplified by 2 primers, containing the sequence of the stem-loop structure to be introduced and one located in the plasmid carrying the gene;

(b) digesting the DNA fragments with restriction enzymes;

(c) ligating and transfecting competent prokaryotic cells;

(3) a method for engineering **PHGPx** containing a selenocysteine instead of cysteine at their active site, in a eukaryotic cell, comprising:

(a) converting TGT codon to TGA by site directed mutagenesis;

(b) synthesizing the 3'UTR of pig PGHPx by annealing 6 synthetic oligonucleotides;

(c) fusing the 3'UTR of pig **PHGPx** to either the 3' end of the open reading frame of csa or the 3' end of csa, by PCR; and

(d) cloning in mammalian and yeast vectors and transforming competent eukaryotic cells;

(4) cosmetic or pharmaceutical dermatological compositions for preventing lipid and phospholipid modification due to peroxidation, leading to damage of skin cells, ageing and/or necrosis; and

(5) aesthetic treatment of human to prevent skin cells damage, ageing and/or necrosis, by administering at least one compound selected from the isolated PGHPx or its analogues, or plant enzymes having **PHGPx** activity, where the plant PGHPx comprises a sequence selected from a fully defined 736-bp sequence, 10 sequences each comprising a 167 amino acids, and 5 sequences each comprising 166 amino acids fully defined in the specification, and the plant enzyme with **PHGPx** activity is glutathione-S-transferase.

ACTIVITY - Dermatological; anti-ageing.

MECHANISM OF ACTION - Peptide therapy.

USE - The plant PGHPx, its analogues, and plant enzymes having **PHGPx** activity are useful for manufacturing an antioxidant cosmetic or pharmaceutical dermatological composition for preventing lipid and phospholipid modification due to their peroxidation, which may lead to damage of skin cells, ageing and/or necrosis. These may also be used to protect phospholipids used in cosmetic compositions against phospholipid

oxidation, and as skin-lightening supporting agents (all claimed).
Dwg.0/14
FS CPI
FA AB; DCN
MC CPI: B04-E03E; B04-E04; B04-E08; B04-L03; B04-N05; B11-C09; B14-R01; D05-C03B; D05-H09; D05-H12A; D05-H12C; D05-H12D1; D05-H12E; D05-H17A3
TECH UPTX: 20010813
TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Compound: The isolated plant PGHPx is isolated from Aloe arborescens or from Aloe vera, where each comprises a specific 167 amino acid sequence fully defined in the specification. The analogue of plant **PHGPx** is a recombinant **PHGPx** where the cysteine residue in the active site is replaced by a selenocysteine residue. The analogue has a sequence selected from five 167 amino acid sequence and five 166 amino acid sequences all fully defined in the specification.
Preferred Polynucleotide: The PGHPx polynucleotide comprises a sequence selected from a fully defined sequence of 728, 769, 505 and 736 bp given in the specification.
Preferred Method: The sequence containing the csa gene is pARO1 also containing the ampicillin-resistance gene, ColE1 ori and the promoter lac. The primers are selected from 2 primers each having 45 bp and a primer coding for the mRNA stem-loop structure selected from 3 sequence each having 34 bp given in the specification. The first fragment is digested with AlwNI enzyme and HpaI enzyme, and the second fragment is digested with the AlwNI enzyme only. Transfection is done in E. coli. The eukaryotic cells are preferably COS cells. Preferred Compositions: The cosmetic or pharmaceutical dermatological compositions further comprises at least an antioxidant selected from Vitamin E, Vitamin C, beta-carotene, glutathione, and other commonly used antioxidants. The plant **PHGPx** or enzymes having **PHGPx** activity are used in the form of enriched plant extracts, partially or completely purified enzyme, recombinant enzyme in prokaryotic or eukaryotic cell types, or as genetically engineered modified enzyme.
ABEX UPTX: 20010813
SPECIFIC SEQUENCES - The PGHPx has a fully defined sequence of 167 amino acids given in the specification, and is encoded by a polynucleotide having a fully defined sequence of 862 bp also given in the specification.

EXAMPLE - Total RNA was extracted from the superior stalk of Aloe arborescens. Poly(A+)mRNA was isolated from total RNA using the polyATtract kit of Promega. Cloning of Aloe arborescens cDNA was done using RACE strategy which include cDNA synthesis from poly(A+)mRNA and isolation of 2 overlapping fragments,3' end and 5' end fragment. 3' RACE was done using a degenerate primer 1 and a 3' poly (dT) anchored primer. Based on the sequence of the 3' fragment, the 5' end was amplified with a specific primer and a 5' anchored primer. The first strand cDNA was synthesized with RNAse H- reverse transcriptase using 500 ng poly(A+)mRNA and 3' anchor-linked poly(dT). 3' end amplification was done with the forward degenerate primer 3 and the reverse 3'anchored primer 2. Polymerase chain reaction (PCR) fragment was carried out with 1 microl of diluted cDNA, primer 2, primer 3, dNTP, and Taq polymerase. After an initial denaturation of 2 min at 94degreesC, a step program of 40 cycles was carried out which included primer denaturation at 94degreesC for 20 sec, annealing at 55degreesC for 30 sec, elongation at 72degreesC for 1 min, and final extension at 72degreesC for 7 min. PCR fragment of 600 bp was purified from agarose gel with the Qiax II gel extraction kit and cloned in the T/A pGem-T vector. To obtain 5'A fragment, a specific cDNA was synthesized from Aloe arborescens poly(A+)mRNA and an anchored oligonucleotide was ligated to the 5' end of the cDNA. PCR was carried out with a reverse 3' specific primer and a forward complement primer of the 5' anchored oligonucleotide. Specific cDNA was synthesized from 500 ng poly(A)mRNA reverse primer 4 and 200 units Superscript II. All PCR fragments were purified from agarose gel, cloned in pGEM-T vector and

sequenced in both directions. Full-length cDNA was done using the Marathon ds cDNA library and primers from 5' and 3' ends of the genes. Primers 10 and 11 were used to isolate alarp1 gene, and primers 12 and 13 to isolate alarp2. Results showed that alarp1 and alarp2 having fully defined sequences of 728 and 769 amino acids, respectively, show 75% similarity. Alarp1 showed 75% similarity to the Citrus gene (csa) while alarp2 shoed 65% similarity to csa. The deduced amino acid sequences of alarp1 and alarp2 showed 95% similarity, each of the deduced amino acid sequences showed 92% similarity to Cit-**PHGPx**. primer 1 gttttcccag tcacgag primer 2 gttttcccag tcacgag primer 3 gtnaangtng cntcnnantg ngg primer 4 ctatcgattc tggaaccttc agagg primer 10 ccagtttcag aaacccttct c primer 11 acgaagcact agaacctcat cc primer 12 gcatttcaac cacctctttt tcc primer 13 cacgagagca gaaatagttc

L121 ANSWER 4 OF 6 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2000-647004 [62] WPIX
DNN N2000-479525 DNC C2000-195647
TI Determining latent **phospholipid hydroperoxide glutathione peroxidase** to determine the fertilization potential of spermatozoa in sperm.
DC B04 C07 D16 S03
IN **FLOHE, L; ROVERI, A; URSINI, F**
PA (FLOH-I) FLOHE L
CYC 83
PI WO 2000054054 A1 20000914 (200062)* EN 32p G01N033-573
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
AU 2000032863 A 20000928 (200067) G01N033-573
EP 1159617 A1 20011205 (200203) EN G01N033-573
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
JP 2002538791 W 20021119 (200281) 29p C12Q001-28
NZ 513245 A 20030228 (200323) G01N033-573
ADT WO 2000054054 A1 WO 2000-EP1877 20000306; AU 2000032863 A AU 2000-32863 20000306; EP 1159617 A1 EP 2000-910773 20000306, WO 2000-EP1877 20000306; JP 2002538791 W JP 2000-604228 20000306, WO 2000-EP1877 20000306; NZ 513245 A NZ 2000-513245 20000306, WO 2000-EP1877 20000306
FDT AU 2000032863 A Based on WO 200054054; EP 1159617 A1 Based on WO 200054054; JP 2002538791 W Based on WO 200054054; NZ 513245 A Based on WO 200054054
PRAI EP 1999-103959 19990309
IC ICM C12Q001-28; G01N033-573
ICS G01N033-561
AB WO 200054054 A UPAB: 20001130
NOVELTY - Determining latent **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) comprising obtaining a sperm sample, solubilizing the spermatozoa by using detergents and chaotropic agents and reactivating latent **PHGPX** using high concentrations of thiols, and determining enzymatic activity of reactivated latent **PHGPx**, is new.
USE - For predicting the fertilizing potential of spermatozoa in sperm samples.
Dwg.0/4
FS CPI EPI
FA AB; DCN
MC CPI: B04-B04L; B04-L03B; B10-A14; B10-A17; B10-E03; B11-C08E3; B12-K04A6; C04-B04L; C04-L03B; C10-A14; C10-A17; C10-E03; C11-C08E3; C12-K04A6; D05-A02A; D05-H09
EPI: S03-E14H4

TECH UPTX: 20001130
TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Methods: Between the solubilizing and determining steps, the method further comprises removing reactivating reagents by gel filtration. Instead of determining enzymatic activity of reactivated latent **PHGPx** the content of solubilized **PHGPx** is determined by conventional immunological techniques or measurement of enzymatic activity.
Preferred Materials: The chaotropic agent is 4-8 M guanidine chloride, 4-8 M guanidine thiocyanate or 5-8 M urea. The thiol is 50-300 mM 2-mercaptoethanol, 25-300 mM dithiothreitol (DTT) or dithioerytliritol (DTE). The sperm sample is from humans or life stock.
ABEX UPTX: 20001130
EXAMPLE - None given.

L121 ANSWER 5 OF 6 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2000-587444 [55] WPIX
DNC C2000-175252
TI Screening assay for **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) inhibitors useful for male fertility control comprises determining **PHGPx** activity in the presence and absence of a potential inhibitor.
DC B04 D16
IN **FLOHE, L; URSINI, F**
PA (FLOH-I) FLOHE L
CYC 83
PI WO 2000053800 A1 20000914 (200055)* EN 33p C12Q001-28
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
AU 2000032864 A 20000928 (200067) C12Q001-28
EP 1159445 A1 20011205 (200203) EN C12Q001-28
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
JP 2002537853 W 20021112 (200275) 30p C12Q001-28
ADT WO 2000053800 A1 WO 2000-EP1878 20000306; AU 2000032864 A AU 2000-32864 20000306; EP 1159445 A1 EP 2000-910774 20000306, WO 2000-EP1878 20000306; JP 2002537853 W JP 2000-603421 20000306, WO 2000-EP1878 20000306
FDT AU 2000032864 A Based on WO 200053800; EP 1159445 A1 Based on WO 200053800; JP 2002537853 W Based on WO 200053800
PRAI EP 1999-103960 19990309
IC ICM C12Q001-28
ICS A61K045-00; A61P015-16; A61P043-00; C12N009-99; G01N033-15; G01N033-50
AB WO 200053800 A UPAB: 20001102
NOVELTY - Screening for inhibitors of **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) derived for human tissue or cells comprises determining the enzymatic activity of **PHGPx** in the absence and presence of a potential inhibitor and selecting a pharmaceutically acceptable inhibitor that reversibly suppresses male fertility by specifically blocking **PHGPx**.
DETAILED DESCRIPTION - Screening for inhibitors of **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) derived for human tissue or cells comprises :
(a) determining the enzymatic activity of **PHGPx** in the absence and presence of a potential inhibitor;
(b) selecting inhibitors that specifically block **PHGPx** activity and screening them for pharmaceutical acceptability; and
(c) selecting a pharmaceutically acceptable inhibitor that reversibly

suppresses male fertility by specifically blocking **PHGPx**.
An INDEPENDENT CLAIM is also included for a pharmaceutically acceptable inhibitor of **PHGPx** from human tissue that is obtainable by the new method and that is used for male fertility control.
USE - The **PHGPx** inhibitors are useful for reversibly blocking male fertility.
Dwg.0/6
FS CPI
FA AB; DCN
MC CPI: B04-F02; B04-L03B; B04-L03B0E; B04-M01; B04-M0100E; B11-C08E3; B12-K04E; B14-P01; D05-H09; D05-H17A6
TECH UPTX: 20001102
TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: The tissue or cells are from livestock or any related mammalian species. **PHGPx** is produced by genetic engineering. The potential inhibitors have been tailored by computer designing and/or produced by a chemical process of production.
ABEX UPTX: 20001102
EXAMPLE - None given.

L121 ANSWER 6 OF 6 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 1996-395987 [40] WPIX
DNC C1996-124595
TI DNA coding for rat **phospholipid hydroperoxide glutathione peroxidase** - useful for recombinant prodn. of the enzyme in eukaryotic host cells which produce glutathione peroxidase contg. seleno cysteine.
DC B04 D16
PA (NIHA) JAPAN ENERGY CORP
CYC 1
PI JP 08191691 A 19960730 (199640)* 16p C12N015-09
ADT JP 08191691 A JP 1995-19966 19950113
PRAI JP 1995-19966 19950113
IC ICM C12N015-09
ICS C07H021-04; C12N009-08
ICI C12N009-08, C12R001:
AB JP 08191691 A UPAB: 19961007
New DNA codes for the rat **phospholipid hydroperoxide glutathione peroxidase** (**PHGPx**) having the 170 amino acid sequence given in the specification. (The rat **PHGPx** amino acid sequence includes a selenocysteine residue at position 46). Also claimed is DNA coding for an amino acid sequence differing from the 170 amino acid sequence of rat **PHGPx** at one or more positions, but having the selenocysteine codon.
USE - The DNA can be used for the prodn. of rat-derived **PHGPx** or its similar peptide by recombinant DNA techniques in suitable eukaryotic host cells. i.e. microbial cells which produce glutathione peroxidase (GPx) contg. selenocysteine coded by TGA.
Dwg.0/5
FS CPI
FA AB
MC CPI: B04-E03E; B14-S03; D05-H12A; D05-H17A3

=> fil dpci
FILE 'DPCI' ENTERED AT 14:23:44 ON 13 AUG 2003
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FILE LAST UPDATED: 21 JUL 2003 <20030721/UP>
PATENTS CITATION INDEX, COVERS 1973 TO DATE

>>> LEARNING FILE LDPCI AVAILABLE <<<

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=> d all tot

L122 ANSWER 1 OF 2  DPCI  COPYRIGHT 2003 THOMSON DERWENT on STN
AN   2000-647004 [62]    DPCI
DNN  N2000-479525        DNC C2000-195647
TI   Determining latent phospholipid hydroperoxide glutathione peroxidase to
     determine the fertilization potential of spermatozoa in sperm.
DC   B04 C07 D16 S03
IN   FLOHE, L; ROVERI, A; URSINI, F
PA   (FLOH-I) FLOHE L
CYC  83
PI   WO 2000054054 A1 20000914 (200062)* EN   32p    G01N033-573
        RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL
            OA PT SD SE SL SZ TZ UG ZW
         W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE
            GH GM HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK
            MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US
            UZ VN YU ZW
     AU 2000032863 A  20000928 (200067)              G01N033-573
     EP 1159617    A1 20011205 (200203)  EN          G01N033-573      <--
         R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT
            RO SE SI
     JP 2002538791 W  20021119 (200281)       29p    C12Q001-28
     NZ 513245     A  20030228 (200323)              G01N033-573
ADT  WO 2000054054 A1 WO 2000-EP1877 20000306; AU 2000032863 A AU 2000-32863
     20000306; EP 1159617 A1 EP 2000-910773 20000306, WO 2000-EP1877 20000306;
     JP 2002538791 W JP 2000-604228 20000306, WO 2000-EP1877 20000306; NZ
     513245 A NZ 2000-513245 20000306, WO 2000-EP1877 20000306
FDT  AU 2000032863 A Based on WO 200054054; EP 1159617 A1 Based on WO
     200054054; JP 2002538791 W Based on WO 200054054; NZ 513245 A Based on WO
     200054054
PRAI EP 1999-103959   19990309
IC   ICM  C12Q001-28; G01N033-573
     ICS  G01N033-561
FS   CPI EPI

CTCS CITATION COUNTERS
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PNC.DI    0              Cited Patents Count (by inventor)
PNC.DX    1              Cited Patents Count (by examiner)
IAC.DI    0              Cited Issuing Authority Count (by inventor)
IAC.DX    1              Cited Issuing Authority Count (by examiner)

PNC.GI    0              Citing Patents Count (by inventor)
PNC.GX    0              Citing Patents Count (by examiner)
IAC.GI    0              Citing Issuing Authority Count (by inventor)
IAC.GX    0              Citing Issuing Authority Count (by examiner)

CRC.I     0              Cited Literature References Count (by inventor)
CRC.X     4              Cited Literature References Count (by examiner)

CDP  CITED PATENTS       UPD: 20010227
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     Cited by Examiner
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     CITING PATENT    CAT    CITED PATENT     ACCNO
     ------------------------------------------------------
     WO 200054054  A  X      WO 9613225    A  1996-239230/24
                    PA:  (BETH-N) BETH ISRAEL HOSPITAL ASSOC; (BETH-N) BETH
                         ISRAEL DEACONESS MEDICAL CENT
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IN: ALVAREZ, J G

REN LITERATURE CITATIONS UPR: 20010227

Citations by Examiner

CITING PATENT	CAT	CITED LITERATURE
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WO 200054054	A	MAIORINO M. ET AL.: "Testosterone mediates expression of the selenoprotein PHGPx by induction of spermatogenesis and not by direct transcriptional gene activation" FASEB J., vol. 12, 1998, pages 1359-1370, XP002141807
WO 200054054	A	URSINI F. ET AL.: "Dual function of the selenoprotein PHGPx during sperm maturation" SCIENCE, vol. 285, 27 August 1999 (1999-08-27), pages 1393-1396, XP002141939

L122 ANSWER 2 OF 2 DPCI COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2000-587444 [55] DPCI
DNC C2000-175252
TI Screening assay for phospholipid hydroperoxide glutathione peroxidase (PHGPx) inhibitors useful for male fertility control comprises determining PHGPx activity in the presence and absence of a potential inhibitor.
DC B04 D16
IN FLOHE, L; URSINI, F
PA (FLOH-I) FLOHE L
CYC 83
PI WO 2000053800 A1 20000914 (200055)* EN 33p C12Q001-28
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
AU 2000032864 A 20000928 (200067) C12Q001-28
EP 1159445 A1 20011205 (200203) EN C12Q001-28 <--
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
JP 2002537853 W 20021112 (200275) 30p C12Q001-28
ADT WO 2000053800 A1 WO 2000-EP1878 20000306; AU 2000032864 A AU 2000-32864 20000306; EP 1159445 A1 EP 2000-910774 20000306, WO 2000-EP1878 20000306; JP 2002537853 W JP 2000-603421 20000306, WO 2000-EP1878 20000306
FDT AU 2000032864 A Based on WO 200053800; EP 1159445 A1 Based on WO 200053800; JP 2002537853 W Based on WO 200053800
PRAI EP 1999-103960 19990309
IC ICM C12Q001-28
ICS A61K045-00; A61P015-16; A61P043-00; C12N009-99; G01N033-15; G01N033-50
FS CPI

EXF EXAMINER'S FIELD OF SEARCH UPE: 20020917

CTCS CITATION COUNTERS

PNC.DI	0	Cited Patents Count (by inventor)
PNC.DX	1	Cited Patents Count (by examiner)
IAC.DI	0	Cited Issuing Authority Count (by inventor)
IAC.DX	1	Cited Issuing Authority Count (by examiner)
PNC.GI	0	Citing Patents Count (by inventor)
PNC.GX	0	Citing Patents Count (by examiner)
IAC.GI	0	Citing Issuing Authority Count (by inventor)
IAC.GX	0	Citing Issuing Authority Count (by examiner)
CRC.I	0	Cited Literature References Count (by inventor)
CRC.X	6	Cited Literature References Count (by examiner)

CDP CITED PATENTS UPD: 20020917

Cited by Examiner

CITING PATENT	CAT	CITED PATENT	ACCNO
WO 200053800	A X	WO 9613225	A 1996-239230/24
	PA:	(BETH-N) BETH ISRAEL HOSPITAL ASSOC; (BETH-N) BETH ISRAEL DEACONESS MEDICAL CENT	
	IN:	ALVAREZ, J G	
WO 200053800	A1 X	WO 9613225	A 1996-239230/24
	PA:	(BETH-N) BETH ISRAEL HOSPITAL ASSOC; (BETH-N) BETH ISRAEL DEACONESS MEDICAL CENT	
	IN:	ALVAREZ, J G	

REN LITERATURE CITATIONS UPR: 20020917

Citations by Examiner

CITING PATENT	CAT	CITED LITERATURE
WO 200053800	A	MAIORINO M. ET AL.: "Testosterone mediates expression of the selenoprotein PHGPx by induction of spermatogenesis and not by direct transcriptional gene activation" FASEB J., vol. 12, 1998, pages 1359-1370, XP002141807
WO 200053800	A	ROVERI A. ET AL.: "Enzymatic and immunological measurements of soluble and membrane bound PHGPx" METHODS ENZYMOL., vol. 233, 1994, pages 202-212, XP000921475 cited in the application
WO 200053800	A	MAIORINO M. ET AL.: "Phospholipid hydroperoxide glutathione peroxidase" METHODS ENZYMOL., vol. 186, 1990, pages 448-457, XP000921458
WO 200053800	A1	MAIORINO M. ET AL.: "Testosterone mediates expression of the selenoprotein PHGPx by induction of spermatogenesis and not by direct transcriptional gene activation" FASEB J., vol. 12, 1998, pages 1359-1370, XP002141807
WO 200053800	A1	ROVERI A. ET AL.: "Enzymatic and immunological measurements of soluble and membrane bound PHGPx" METHODS ENZYMOL., vol. 233, 1994, pages 202-212, XP000921475 cited in the application
WO 200053800	A1	MAIORINO M. ET AL.: "Phospholipid hydroperoxide

glutathione peroxidase" METHODS ENZYMOL., vol. 186, 1990, pages 448-457, XP000921458

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=> d his

     (FILE 'HCAPLUS' ENTERED AT 12:36:55 ON 13 AUG 2003)
                DEL HIS
L1               1 S (EP99-103959 OR WO2000-EP1877)/AP,PRN
                   E FLOHE L/AU
L2             248 S E3,E4
                   E URSINI F/AU
L3             188 S E3,E4
                   E ROVERI A/AU
L4              43 S E3,E4

     FILE 'REGISTRY' ENTERED AT 12:40:38 ON 13 AUG 2003
L5               1 S 97089-70-8

     FILE 'HCAPLUS' ENTERED AT 12:41:12 ON 13 AUG 2003
L6             247 S L5
L7              41 S SELENOPEROXIDASE OR SELENO PEROXIDASE OR (EC OR "E C")()1 11
L8             321 S PHOSPHOLIPID HYDROPEROXID# GLUTATHION# PEROXIDASE
L9             192 S PHGPX
L10            358 S L6-L9
L11            219 S L10 AND (PD<=19990309 OR PRD<=19990309 OR AD<=19990309)
L12             60 S L2-L4 AND L10
L13             48 S L11 AND L12
L14             12 S L12 NOT L13
                   SEL DN AN L13 1 2
L15              2 S L13 AND E1-E6
L16              2 S L1,L15
                   E SPERM/CT
L17              9 S E3-E18 AND L11
                   E E3+ALL
                   E E15+ALL
                   E E21+ALL
                   E FERTILITY/CT
                   E E3+ALL
                   E TESTIS/CT
                   E E3+ALL
L18             32 S E12,E11+NT AND L11
                   E E21+ALL
L19              1 S E3 AND L11
                   E E7+ALL
                   E E22+ALL
L20              1 S E4,E5,E3+NT AND L11
                   E FERTILITY/CT
                   E E3+ALL
L21              2 S E3 AND L11
                   E E6+ALL
L22              2 S E1 AND L11
                   E E8+ALL
L23              0 S E3 AND L11
                   E E7+ALL
L24              9 S E3,E2+NT AND L11
                   E E40+ALL
L25             34 S E4+NT AND L11
L26             42 S L11 AND (SPERM? OR TESTES OR TESTIS OR SEMEN)
L27             44 S L17-L26
L28             12 S L27 AND (PATTERN OR BIOLOGICAL SAMPLE OR MATURATION OR PUBERT
                   SEL DN AN 1-3 6 7 11 12
L29              7 S L28 AND E1-E21
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L30             7 S L16,L29
L31            10 S L6 (L) (ANT OR ANST)/RL
L32            12 S L6 (L) USES/RL
L33           224 S L6 (L) BIOL/RL
L34             2 S L31,L32 AND L30
L35            11 S L32,L32 NOT L34
L36             3 S L35 AND L11
L37             1 S WO9613225/PN
L38             1 S MAIORINO ?/AU AND 1998/PY AND FASEB?/JT AND (12 AND 1359)/SO
L39             1 S MAIORINO ?/AU AND 1990/PY AND ("METHODS IN ENZYM?")/JT AND (1
L40             1 S ROVERI ?/AU AND 1994/PY AND ("METHODS IN ENZYM?")/JT AND (233
L41             1 S URSINI F?/AU AND 1999/PY AND SCIENCE?/JT AND (285 AND 1393)/S
L42             4 S L37-L41 AND L1-L4,L6-L36
L43             5 S L37-L42
L44            11 S L30,L34,L43
L45            11 S L44 AND L1-L4,L6-L44

     FILE 'REGISTRY' ENTERED AT 13:35:24 ON 13 AUG 2003
L46             1 S 57-13-6
L47             1 S 50-01-1
L48             1 S 593-84-0
L49             1 S 113-00-8
L50          2351 S 113-00-8/CRN
L51             1 S 60-24-2
L52             1 S 3483-12-3
L53             1 S 6892-68-8
L54            51 S C4H10O2S2/MF
L55             7 S L54 AND 2 3 BUTANEDIOL
L56             5 S L55 NOT (D/ELS OR 35)
                  SEL RN
L57            28 S E2-E26/CRN
L58             9 S L57 AND (NA/ELS OR 57-13-6/CRN OR K/ELS OR MXS/CI)
L59             7 S L58 NOT C6/ES
L60             6 S L59 NOT UNSPECIFIED
L61           107 S L50 NOT ((PMS OR MXS OR AYS OR IDS OR MNS)/CI OR COMPD OR WIT
L62           110 S L46-L49,L61
L63            12 S L51-L53,L56,L60

     FILE 'HCAPLUS' ENTERED AT 13:45:55 ON 13 AUG 2003
L64         11185 S L63
L65         72894 S L62
L66             6 S L10 AND L64
L67             2 S L10 AND L65
L68             7 S L66,L67
L69             5 S L68 NOT (MYELOID OR OSBECK)
L70             4 S L69 NOT ALS
L71            14 S L45,L70
L72            12 S L71 AND L11
L73            14 S L71,L72
                  E DETERGENT/CT
L74             1 S E12-E56 AND L10
                  E E12+ALL
L75             1 S L10 AND E4,E5,E3+NT
L76            11 S L10 AND DETERGENT
L77            11 S L11 AND L74-L76
L78             2 S L77 AND L73
L79             9 S L77 NOT L78
                  SEL DN AN 5 8
L80             2 S L79 AND E1-E6
L81            16 S L73,L74,L75,L78,L80
L82            20 S L10 AND THIOL
L83             4 S L82 AND L81
L84            16 S L82 NOT L83
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L85             8 S L11 AND L84
                  SEL DN AN 1 2 5 8
L86             4 S L85 AND E7-E18
L87            20 S L81,L83,L86 AND L1-L4,L6-L45,L64-L86
                  SEL HIT RN

     FILE 'REGISTRY' ENTERED AT 14:02:37 ON 13 AUG 2003
L88             7 S E19-E25

     FILE 'REGISTRY' ENTERED AT 14:02:55 ON 13 AUG 2003

     FILE 'HCAPLUS' ENTERED AT 14:03:04 ON 13 AUG 2003

     FILE 'BIOSIS' ENTERED AT 14:04:26 ON 13 AUG 2003
L89           323 S L10
L90           207 S L89 AND PY<=1999
L91            55 S L90 AND (CONGRESS? OR CONFERENCE? OR POSTER? OR SYMPOS? OR ME
L92            53 S L90 AND 00520/CC
L93            53 S L91 AND L92
L94             6 S L93 AND 165?/CC
L95            22 S L90 AND 165?/CC NOT L91
L96            43 S L90 AND (SPERM? OR TESTIS OR TESTES OR SEMEN)
L97            44 S L94,L96
L98             1 S L95 NOT L97
L99             6 S L97 AND METHOD?/CT
L100            0 S L97 AND METHOD?/CC
                  SEL DN AN 4 L99
L101            1 S L99 AND E26-E27
L102            7 S L94,L101
L103           82 S L90 AND (01054 OR 0250?)/CC
L104            5 S L90 AND 32500/CC
L105            1 S L90 AND 32600/CC
L106            6 S L104,L105
L107           76 S L103 NOT L106
L108           73 S L107 NOT L102
                  SEL DN AN 50 62 L108
L109            2 S L108 AND E28-E31
L110            9 S L102,L109
L111           49 S L89 AND (FLOHE L? OR URSINI F? OR ROVERI A?)/AU
L112           39 S L90 AND L111
L113            5 S L110 AND L111
L114            9 S L110,L113
L115           34 S L112 NOT L114
                  SEL DN AN 1 3-6 9 15 18 31 33
L116           10 S E32-E51 AND L115
L117           19 S L114,L116 AND L89-L116

     FILE 'BIOSIS' ENTERED AT 14:19:24 ON 13 AUG 2003

     FILE 'WPIX' ENTERED AT 14:19:36 ON 13 AUG 2003
L118            7 S L7/BIX OR L8/BIX OR L9/BIX
L119            2 S L118 AND (FLOHE ? OR URSINI ? OR ROVERI ?)/AU
L120            7 S L118,L119

     FILE 'WPIX' ENTERED AT 14:21:34 ON 13 AUG 2003
L121            6 S L120 NOT DRINK

     FILE 'DPCI' ENTERED AT 14:23:02 ON 13 AUG 2003
L122            2 S (EP1159445 OR EP1159617)/PN

     FILE 'DPCI' ENTERED AT 14:23:44 ON 13 AUG 2003
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